A Presidential Address
ON
SOME IMPERFECTIONS OF PUBLIC HEALTH ADMINISTRATION.

Delivered at the Conference of Medical Officers of Health at the Congress of the Sanitary Institute in Liverpool on Sept. 25th, 1894,

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GENTLEMEN,—When, to my surprise, the Council of the Sanitary Institute invited me to act as President of this Conference of Medical Officers of Health I naturally felt some diffidence about accepting that honour. The necessity for an opening address was not the greatest cause of my hesitancy. I could not but recognise the fact that there were others far better fitted than myself to perform the duties of the office. Having, however, acceded to the request of the Council of the Institute, I take this opportunity of expressing my hearty thanks to it, not merely for the honour which it has done me, but for that also, and especially which it has done to the borough that it is my fortune to serve. The time and the place in which we meet have led me to think of the past and the future prospects of the public health medical service of this country. We, at least, may be proud of the achievements of the past; we may glory, too, in the legacies of work well done which have been left us to cherish and to add to. But can we feel well pleased with the present prospects of those who are to follow us? Can we, without much reserve, say that the results of the labours of medical officers of health are, outside the immediate sphere of their local work, either largely utilised by, or of more than very moderate usefulness to, the nation? The time and the place impel me to review these questions. The time does so, inasmuch as we are rapidly nearing the close of that century within which the whole history of active and systematised sanitary effort is comprised; the place, because it was in this city that, owing to the wisdom of its governing body, the first medical officer of health in this country was appointed. First, then, Liverpool in 1847 and the City of London in 1848 set the example to the country of appointing skilled medical advisers for the purpose of dealing seriously and scientifically with the conditions inimical to health within their boundaries. Their example was followed by such cities and towns as Bristol, Cardiff, Leeds, Leicester, Manchester, Salford, Dublin, and Glasgow, as well as by others, down to the year 1872, when the appointment of medical officers of health to all districts in England and Wales was made obligatory. It is hardly to be wondered at that, viewing the good which had resulted in such localities as had obtained the services of medical advisers, the Royal Sanitary Commissioners of 1869–71 should urge the universal appointment of medical officers of health. It is still less to be wondered at that, as a result of their investigations, the Commissioners should declare the subject of effective sanitary local government to be one the importance of which could not be too highly estimated. The Public Health Acts of 1872 and 1875, in large measure, gave practical expression to the observations of the Royal Commissioners; but they did not wholly secure effective sanitary local government. Other Acts have been passed since then for the extension of local government; but neither have these extended, as fully as they ought to have, effective sanitary administration. I cannot but regard some of the imperfections of our public health administration, so far as the public health medical service is concerned, from two points of view—the one disclosing the spirit which has animated the medical profession, and the other that adopted by the Legislature and the bureau in meeting their responsibilities.

Recognition of duties by the medical profession.—In the early days of the appointment of medical officers of health, especially before and immediately after the passing of the Public Health Act of 1872, it could not but be otherwise, in view of existing circumstances, that only a small proportion of those then chosen from the ranks of the medical profession had any special knowledge of sanitary science or practice. The majority of the newly appointed officers simply had to learn the nature of the duties that were required of them by the Legislature. The success or failure of the intentions of the new Public Health Act virtually depended on the industry, tact, and intelligence of these gentlemen, and on their ability to secure the confidence of their various boards of administration. It is now recognised, and history cannot properly ignore the fact, that no small portion of the whole number appointed proved equal to the task committed to them. In more than one part of the country, but more particularly in these northern counties, provincial officers, following the example set by their metropolitan brethren, banded themselves together into associations for the purposes of inter-communication and mutual assistance in their labours. Hence the foundation of our Incorporated Society of Medical Officers of Health, and that unbroken brotherhood which has fortunately so far distinguished the body of health officers. But it was obvious from the first that if for political, social, or personal reasons the average medical man was most likely to obtain the official posts thus created by the Act of 1872; if the growing interests of sanitary administration were to be protected, and if, therefore, the aim of the country should be to draw from the ranks of the medical profession as its sanitary advisers those only who were willing to fit and train themselves for such high calling, some steps would have to be taken. It was plain that a knowledge of hygiene, and possibly qualification therein, would sooner or later have to be made an essential condition of candidature for office. It was equally obvious, in the absence of a restrictive qualification, that, for the general welfare of the country, the teaching of elementary hygiene should form a part of the ordinary curriculum of the medical schools. These things were, however, felt and debated much more by the respected leaders of our profession than by the public. The traditions of medicine were worthily added to by the insistence of the leading medical schools, and examinations in Sanitary Science or State Medicine were speedily instituted. I believe that the University of Dublin even held its first examinations in 1871, before the passing of the Act which made the appointment of medical officers of health obligatory in England and Wales. In 1875, however, the Universities of Cambridge and Edinburgh followed suit, and the recognition of the wisdom of their step was general throughout the profession. Let it, therefore, be clearly understood and remembered that this additional impost on medical education was made for the welfare of the country and to the honour of our profession—voluntarily and from high motive, not by legislative decree or in deference to popular demand.

Legislative recognition of public health diplomas.—From 1871 to 1888 inclusive nearly 400 legally qualified medical practitioners had of their own accord secured diplomas in Public Health after proper examination. Then, and not till then, did the Legislature show, by enactment, appreciation of what the Universities and medical licensing bodies had foreseen was necessary, and require, though only to a limited extent, evidence of proficiency in health officers. I refer, of course, to Section 18 of the Local Government (England and Wales) Act of 1888,[1] which still leaves districts, and combinations of districts, having less than 50,000 inhabitants free to appoint as medical officers of health those who have not given special evidence of sanitary knowledge. In the meantime the General Medical Council, acting under the powers conferred on it by statute, has imperatively insisted, on more than one occasion, upon increased stringency in the preparation by, and examination of, qualified medical practitioners for diplomas in public health. The last regulations of the Council[2] are not in themselves either unjust or unreasonable; but, regarded in conjunction with Section 18 of the Local Government Act of 1888, a situation is disclosed which constitutes a most serious defect in the sanitary administration of this country. The defect is indeed an injustice to intending medical officers of health.

Uncertain value of public health diplomas.—Put shortly, it amounts to this. In large districts only are diplomates, or others specially qualified in public health, eligible for appointment. This, however, was the pretty general practice before the passing of the Act of 1888. Therefore, the

[1] See Note A. [2] See Note B.

worth of the diploma was not materially altered in that respect by the passing of the Act. But, the diploma having been recognised by statute as specially qualifying for public health appointments, an expectation has not unnaturally been created in the minds of intending candidates that the diploma would prove valuable in competitions for districts having less than 50,000 inhabitants. No doubt, to a moderate, but only a moderate, extent this expectation has been realised. In very many cases, however, its value has not proved sufficient to outweigh local, political, social, or personal considerations. And yet, with the present extremely limited advantage of the diploma, fully qualified medical men are being led to spend at least a year of additional study, at much expense of time and money, while the bulk of districts are not required to appoint specially qualified health officers. This appears to me to be a grave injustice. The number of the larger appointments which fall vacant year by year are nothing like enough to justify the rush for health diplomas that is going on, if we may read the endeavours to obtain these diplomas as anything like an index of the numbers who are willing to take public health appointments. On the other hand, there would be no loss of value to the diploma, and it would be mere justice to the candidates for it, if the approximate number of appointments were knowable for which it would be required outside legal requirements. In that case, medical men would then qualify for the ranks of the public health medical service with their eyes open at any rate as much as are those of military men who seek to qualify themselves for staff appointments.

Increased value of diplomas is desirable in public interests — If, then, it be desirable in the public interests to further encourage a high standard among officers of the public health medical service, the number of appointments for which the diploma should be compulsory must be increased. This could not, however, be satisfactorily brought about by a simple statutory enactment that every sanitary authority should appoint only a diplomate in public health as its medical officer of health. The salaries in far too many districts are separately quite insufficient to maintain a single man independently of private practice, or to recompense him for the labour and expense of obtaining the qualification. For such districts, unless there were also fair prospects of general or consulting practice, there would be no candidates from outside, even if there were no specially qualified practitioners within them. In this consideration let me recall to your minds a summary of some returns embodied in the address of the President of our Society of Medical Officers of Health in November last.[3] The returns were made in the year 1888, and showed that "as regards salaries, no less than nearly 900 of those officers who were not debarred from private practice received amounts varying downwards from £50 to (in ten instances) less than £5 per annum, 358 ranged between £50 and £100, 275 received from £100 to £200, and only 25 exceeded this amount." To oblige, therefore, districts such as the majority of these to appoint only diplomates in public health would not greatly benefit the band of diplomates, unless they were already in good practice within them. Besides, the figures which I have quoted indicate a very serious defect in the public health administration of the country. We know how absurd it is to require of a general practitioner in fair practice, for the paltry sum of £20 or even £50 per annum, that he should keep constant supervision over notification returns of sickness from day to day, mortality statistics from week to week, regulate the work of inspectors of nuisances, and run the risk of offending his private patients by vigilance over their insanitary occupations or properties. The marvel, indeed, is that so much good local work as has been done should have been done under such circumstances. It can only have been done at great sacrifice of personal interests.[4] But the Legislature, if it takes count of these things, hesitates at large interference with local desires. We are, of course, all perfectly aware that the spirit of local government is the mainspring of our national vigour; but this spirit is not necessarily antagonistic to the strengthening of national health administration. If it be good for purposes of national health that the prospective medical advisers of sanitary districts should be encouraged, at great personal pains and expense, to study hygiene profoundly—and none who have intelligently watched the results of past appointments in large urban or combined districts will probably deny this good—then the smaller districts of the country ought to be prepared to give that encouragement by combinations among themselves, and so put themselves in a position to secure the whole-time services of those medical men who are highly trained in public health. Combinations of districts may be made for the purpose of securing an independent officer of health without occasioning any transference of district authority. The boards of the several districts can carry on their business just the same; but they have the advantage of unbiased official advice in common instead of that which may be easily marred by conflicting interests. I speak feelingly on this matter, because my own experience during six years as the officer of such a combination of ten local authorities was particularly happy, both in respect of work accomplished and of official relations with all the local authorities. I was, and still am, deeply impressed with the great public advantages of combinations of small districts; and if, as I believe, local opinions are gradually becoming less averse to the conjoint appointment of a responsible health officer then there should be less difficulty than there has hitherto been in the way of securing combinations for that purpose. How does the law, then, stand in this matter? Section 286 of the Public Health Act of 1875[5] gives the Local Government Board powers to compulsorily combine districts for the purpose of appointing a medical officer of health, on a representation made to it, if it appears to that Board that such an appointment would diminish expense, or otherwise be for the advantage of those districts. The section does not say from whom the representation may come; presumably it may come from anyone. To my mind, the weakness of this otherwise powerful section of the Act lies in this matter of a representation. There is, of course, no difficulty when a certain number of authorities are willing to combine and make a joint representation. But if a representation were made by a single authority, without agreement between it and other authorities having been arrived at, bad feeling would naturally be engendered between it and its neighbours, even though the local advantages of combination might be most obvious. If an individual made a similar representation he could scarcely fail to cover himself with odium or ridicule, or both, according to his local status and influence. Again, a representation might, quite properly, I imagine, be made by an inspector of the Local Government Board who had been sent to inquire into and report upon the sanitary administration of one or more districts in a particular neighbourhood. No one having any good local influence would be likely to raise any serious protest to such a representation; but it is perfectly conceivable that the Local Government Board might greatly hesitate to take action thereon, lest by so doing the Board should be made to appear both arbitrary and inconsiderate of local feelings. It is also conceivable that the Board would not desire to act on the representation of a single authority or an individual, on the ground that the representation did not indicate such a proportion of local opinion as would justify an enforced combination or guarantee its satisfactory working. It thus appears to me that some other machinery than dilatory agreement between neighbouring authorities is necessary for the purpose of effecting combinations of districts. The machinery, however, must be more local than central if it is to be popular. An extension of sanitary administration was made possible, but not obligatory, by the Local Government Act of 1888. Under that Act county councils were established, and these councils were entrusted with certain powers of sanitary supervision and control of districts within their counties. Those powers have, moreover, been added to by the passing of the Isolation Hospitals Act of 1893. Under Section 17 of the Local Government Act of 1888[6] the council of any county has the power to appoint a medical officer of health, or more than one if it

[3] Dr. W. T. G. Woodforde, on the Local Government Bill. Public Health, vol. vi., pp. 67-70.

[4] I cannot forbear making the following quotation in connexion with this subject: "It would, of course, be unfit that the officer should be collaterally engaged in any commerce which might probably render his official judgment less single-sighted or his official activity less straightforward than it ought to be; and presumably the duties of the office would not in general easily harmonise with the interests of a practitioner who should be having to earn the main part of his livelihood by ordinary private practice within the same area. It would also seem clear that officerships of health could hardly answer to the pretensions of their name, nor be of much real account in the service of the public, except in proportion as they were important items in the lives of those who held them; not in each case on so petty a scale as to involve mere driblets of occasional duty, but, on the contrary, on such a scale that each appointment, in regard of its work and remuneration, might satisfy, wholly or in considerable part, the claims of a moderate personal ambition." English Sanitary Institutions, by Sir John Simon, K.C.B., p. 336.

[5] See Note C.

[6] See Note D.

thinks fit, who shall not hold any other appointment or engage in private practice without express written consent of the council. Further, the county council and any district council are entitled to arrange for the services of such officer being made available in such district, and the arrangement, when made and carried into effect, relieves the district from the necessity of appointing a medical officer of health so long as it remains in force. Now here we have a voluntary means in small counties of effective sanitary supervision by one officer; but, so far as I know, it has not been utilised. In the institution of county councils themselves, however, we have the machinery for securing effective sanitary administration on a national rather than a peddling scale. I can of course only suggest how this machinery might be set in motion. It would be presumptuous in me to do more, for the subject has its technical difficulties, and how to overcome these belongs more to the politician and the parliamentary draftsman than to a local official. But I would venture to suggest that the means by which suitable areas for sanitary supervision by medical officers of health, devoting the whole of their time to that work, may be found in some such scheme as is shadowed by the following provisions: 1. That a minimum unit of population be determined on, the possession of which, according to the last published census for the time being, shall alone entitle any single sanitary district, on and after a date to be fixed by statute, to independently appoint a medical officer of health. 2. That in respect of a district which shall be below the required standard of population the council of the county, within which it is situated shall determine and arrange, with or without public inquiry as the law may require, in which way the greatest sanitary advantage may be obtained for it, either: (*a*) under the powers already conferred on county councils by Subsection 2 of Section 17 of the Local Government Act of 1888, or (*b*) by means of its union with one or more other districts, not being a county borough, within the same county, for the purpose of appointing a medical officer of health. 3. That in respect of a district having the required standard of population, but not able to pay a salary to its medical officer of health which in the opinion of the county council is reasonably sufficient, under all local circumstances, to secure the undivided services of a medical officer of health, it shall be in the power (or required) of the council to inquire and determine how such district may be best served by its union with one or more districts of whatever size, not being a county borough. 4. That the decision of a county council to require any such union of districts be forthwith formally communicated under the seal of the council to the Local Government Board, and that such formal communication do constitute a representation to the Board under Section 286 of the Public Health Act of 1875, in accordance with which section the Board shall thereupon act. If some such scheme as I have thus ventured to sketch became statutory, an additional provision might then be reasonably added requiring that no medical officer should be thereafter appointed unless duly qualified in public health. I cannot but believe that in some such way as this the public health administration of the country would be greatly improved, mere local prejudices might be overcome by local influence for the general good, and the public health medical service would be composed of specially trained and approved officers. But, apart altogether from the construction of such a scheme as this, the limit of population for which a specially qualified medical officer of health should be required may surely be lowered from what it is at present. It would appear to be more in the spirit of the Public Health Act of 1875 if the limit were reduced from 50,000 to 25,000 persons. Section 286 of that Act[7] stipulates "that no urban district containing a population of 25,000 and upwards or (in the case of a borough) having a separate court of quarter sessions shall be included in any union of districts" formed under that section, without its consent. This is tantamount to saying that a district having 25,000 inhabitants, or being a quarter sessions borough, may be considered as a proper one to have a medical officer of health to itself. In that case it should be in a position to pay for the services of one, and that officer should in the future always be properly qualified in public health.

Annual reports of medical officers of health.—The time at my disposal will not permit me to do more than refer to one other of the imperfections of public health administration; but it is one in which many medical officers of health have, and in which all ought to have, an interest. It is in connexion with that which to many of us is the fatigue of our office—our annual reports. We are required to compile them. We accordingly turn them out annually. Undoubtedly, they are of varying quality and interest; but in respect of those for the compilation of which time and patience have been well-nigh exhausted how disproportionate is their subsequent usefulness to the labour which was bestowed on them. This was not, however, the intended result of the suggestion of the Royal Sanitary Commissioners of 1869–71 that such reports should be required of medical officers of health. They, indeed, put the matter quite plainly: "..... by the reports it"—that is the central authority—"will receive from the medical officers of health throughout the country, from his own medical officer or staff (fulfilling the duties of the medical officer of the Privy Council), from the Registrar-General, and from other sources, the central authority will in the future possess, under its own hand, a mass of important information, which, however, will be comparatively useless if not duly arranged and published with a view not only to its appreciation by scientific men but also for popular comprehension. We recommend that the new statute should empower and require the central authority to take measures accordingly."[8] Moreover, in their general observations the Commissioners laid particular stress on the advantages which would be derived from the collection, study, and elaboration of these local reports. But if the results of such study are not published, then that which is of general interest is practically lost to the public. It is with this aspect of the matter that I wish to deal. It is not an easy thing for those who have not had to compile reports, such as we have to, year by year, to appreciate the large amount of labour and thought involved in the task. Some medical officers produce them with greater facility than others, and it may also be that others get through theirs in a more or less perfunctory fashion; but to all who conscientiously strive to make their reports useful and truthful the task is a serious one, and few can meet their obligations in these respects without some interference with the ordinary course of their other duties. The importance of the reports is manifest. They are, of course, records of the mortality and sickness statistics, and inquiries made respecting them, for a period of twelve months. They also contain information as to the local administration of public health during the same period, both in ordinary circumstances and to meet special needs. The reports are, therefore, mainly local; but this fact is not antagonistic to the supposition that they may contain facts, figures, and observations the knowledge and application of which may be of national interest or usefulness. Under the present arrangement one copy of the report of the medical officer of health is kept by himself, one by the local authority, one is sent to the county council if the district be not a county borough, and another is sent to the Local Government Board. This arrangement fulfils one of the intentions of the Royal Commissioners and is undoubtedly loyally regarded by the central authority in one respect, inasmuch as the reports sent to it are read, filed for reference, and utilised as the basis of action by the central board against dilatory or negligent local sanitary authorities. So far so good. But the reports appear to be only utilised in the central office for central purposes of action and reference, and matters of general interest in them remain buried there from the public eye. A fair number of the reports may contain careful accounts of investigations into obscure occurrences of zymotic disease, of influences affecting the artisan classes under varying circumstances in the dwelling and the workplace, of admirable modifications in rural as well as urban districts of local sanitary administration, and of other matters of importance, as useful for the help and guidance of the whole body of health officers as for the education of the public. But these are not abstracted, arranged, and made available for general information by the central authority, as the Royal Commissioners recommended that they should be. It is true that a very moderate proportion of the whole number of sanitary authorities in the country go to the expense of having the reports of their medical officers of health printed. They are to be highly commended for so doing. But the majority of rural authorities, in whose districts investigations into isolated outbreaks of disease are usually quite as interesting as in large urban districts, do not print their medical officers' reports. Unless, therefore, those medical officers are good

[7] See Note C.

[8] Second Report of the Royal Sanitary Commission, vol. i., 1871, p. 87.

enough to go to the trouble of composing a further account of their investigations, for submission to one of our societies or for insertion in the medical press, neither we nor others out of their districts have the chance of learning of or studying them. When the reports are printed they are not of course published by the local authority. A varying number of copies are issued for distribution to the members of the local governing body, to the local press, to prominent medical practitioners and persons of position in the district, and some complimentary copies to the compiler for his personal presentation. In this last way some of us are fortunate enough to learn what is being done in other districts of the country, and to obtain information respecting special outbreaks of disease and the measures adopted to deal with them. Some few of us are thus fortunate; but others, less so, are equally interested in obtaining that information, and they cannot even buy it. My contention, therefore, is this, that inasmuch as the central authority is the single repository of all the health reports of the country—i.e., England and Wales—it has the means in its possession for the publication, either annually or biennially, of a volume of useful abstracts from such of those reports as contain facts of value. Such a publication would be important in more ways than one. It would in the course of a few years become an invaluable index of inquiries into disease and of local health administration under widely varying circumstances.[9] Those who desired to learn of these would then know where to look for them. The volume would be helpful to medical officers of health in telling them of dangers experienced by other officers under particular conditions, and would thus warn them and assist them in forming their own judgments. It might even serve to stimulate local authorities by setting before them the examples of others. It certainly would be of national interest and usefulness. But in addition to these major indications of value we also may see in this small scheme an encouragement, such as has not yet been given, to some of the most patient and painstaking officers, whose labours indeed are barely known to some of us and are wholly unknown to many. It is likewise conceivable that it would act as a direct incentive to some other officers to aim at greater care in the preparation of their reports, and greater efforts to make them more generally useful. And these would be good results. I cannot believe that the good which could be gained from such a publication as I have suggested will be denied; but I suppose that the excuse for not carrying out the suggestion may be made on the ground of the expense it would entail. Surely, however, the expense need not be a large one. If the reports are carefully read through and abstracted now for one purpose, other portions, which would be useful as general information, might also be marked off for abstraction and subsequent publication. Besides, the volume from the first would be a saleable one—a good deal more so indeed than many of the blue-books which are published at the national expense. I cannot but believe, moreover, that if this small scheme were to be at all earnestly supported in influential quarters the Treasury could with a little contrivance supply the means for its execution. I cannot leave this subject without forestalling a question which may be asked by those who are not health officers. Are local health reports of much value for national purposes? The place in which we have met itself suggests an answer. The impetus to permanent public health legislation in this country was supplied by members of our profession in admirable reports on the gross unhealthiness of certain towns and districts with an ability and courage of the highest order. Those reports contained illustrations of national needs; but they were distinctly local reports. I might quote the names of Drs. Southwood Smith, Neil Arnott, and others; but it is sufficient to speak here only of Dr. W. H. Duncan. He wrote a closely reasoned report on the physical causes of the high rate of mortality in Liverpool. This not merely led to his being appointed the first medical officer of health in the country, but so deeply impressed the Commissioners, who were inquiring into the state of large towns and populous districts in England, that they printed it as part of their report in 1844. This report, when printed and published, served then, and was of value, for national purposes. I may have chosen a monumental illustration, but it none the less indicates how in varying degrees selected portions of reports of local health officers may, even in these later days, be also utilised for more than local needs.

Conclusion.—I have trespassed too long upon your time, and may do so no further. I have, however, but one word more to say. The circumstances of the occasion have led me to address you on matters that have for some time past seemed to me to be imperfections in the public health administration of this country; but they specially recommended themselves to my mind for review, because they appeared to be somewhat easy of correction. They may not be so. In any case they may continue to be unremedied. The continuance of the imperfections cannot, however, rob us of one of the chief stimuli of our aims—the records of the labours of those who have gone before. What we cannot get altered we must indeed abide by. But we may do something more than protest, and none can prevent us. We may so live up to those records of the past that the work which we do shall make the imperfections of public health administration more and more glaringly manifest. Others outside our profession may thus be enabled to see them, and be led to insist on the necessity for amendment. When they do—and they will not, as we do, labour under the disadvantage of being directly interested parties—then the form of health administration is more likely to be moulded to meet the ever present needs of the country, and to prove more beneficial to all whose health interests it is the duty of the Legislature to enlarge. And so, though we indeed may fail to win reform, yet still we can pave the way for others to secure it.

Note A. The Local Government (England and Wales) Act of 1888.—Section 18: "1. Except where the Local Government Board, for reasons brought to their notice, may see fit in particular cases specially to allow, no person shall hereafter be appointed the medical officer of health of any county or county district, or combination of county districts, or the deputy of any such officer, unless he be legally qualified for the practice of medicine, surgery, and midwifery. 2. No person shall after the first day of January, 1892, be appointed the medical officer of health of any county or of any such district or combination of districts as contained, according to the last published census for the time being, a population of fifty thousand or more inhabitants, unless he is qualified as above mentioned, and also either is registered in the Medical Register as the holder of a diploma in sanitary science, public health, or State medicine under Section 21 of the Medical Act, 1886, or has been during three consecutive years preceding the year 1892 a medical officer of a district or combination of districts, with a population according to the last published census of not less than 20,000, or has before the passing of this Act been for not less than three years a medical officer or inspector of the Local Government Board."

Note B. Rules adopted by the General Medical Council on Dec. 1st, 1893, for diplomas in State Medicine:[10]—

"I. The Council, having regard to the terms of Section 18 of the Local Government Act, 1888, and observing that under that section special privilege is to be accorded to the holders of the diplomas granted under Section 21 of the Medical Act, 1886, and therein described as diplomas in sanitary science, public health, or State medicine, thinks it essential to declare, with regard to its own future action under Section 21 of the Medical Act, 1886, that it will not consider diplomas to 'deserve recognition in the Medical Register' unless they have been granted under such conditions of education and examination as to ensure (in the judgment of the Council) the possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the public health; and the Council in forming its judgment on the conditions of education and

[9] Within five months of his death, in this year, Dr. S. W. North, one of the older medical officers of health in the country—he was appointed for the city of York in March, 1873—writing to me on the subject, said: "For want of this information I have a firm conviction that not half the lessons which might be learnt from the recent epidemic of small-pox will ever become public property. I have come across during the past year a perfect legion of facts in connexion with the administration of small-pox hospitals, and I feel that whenever I hand over my collection of reports to my successor it will be too weighty a task to search out the hundreds of valuable papers which they contain, and which ought to rescue the writers from forgetfulness." Much the same might be said also respecting the observations made last year in some, and possibly in many different, parts of the country as to the peculiar relation shown by Dr. Ballard to exist between the prevalence of summer diarrhœa and the temperature of the earth. It may be many years before we again have so prolonged a period of heat as was experienced in 1893, and, so far, we have had no assurance that we shall ever know either the extent to which such observations were made or the value of the collected evidence.

[10] To apply to those who begin the study of sanitary science after Jan. 1st, 1894.

examination will expect the following rules to have been observed:—1. A period of not less than twelve months shall elapse between the attainment of a registrable qualification in Medicine, Surgery, and Midwifery and the admission of the candidate to any examination or any part thereof for a diploma in Sanitary Science, Public Health, or State Medicine. 2. Every candidate shall have produced evidence of having, after obtaining a registrable qualification, attended during six months practical instruction in a laboratory or laboratories, British or foreign, approved of by the body granting the qualification, in which Chemistry, Bacteriology, and the Pathology of the Diseases of Animals transmissible to Man are taught. 3. Every candidate shall have produced evidence that, during a period of six months after obtaining a registrable qualification, he has either practically studied the duties of outdoor sanitary work under the medical officer of health of a county or large urban district, or else has himself held an appointment as medical officer of health under conditions not requiring the possession of a special sanitary diploma. The certificate of an assistant officer of health of a county or a large urban district may be accepted, provided the medical officer of health of the county or district consents to the assistant officer giving such instruction. 4. Every candidate shall have produced evidence that he has attended the clinical practice of a hospital for infectious diseases recognised by one of the licensing bodies, provided that such a course of instruction may have been taken as part of the curriculum for his registrable qualification in Medicine, Surgery, and Midwifery. 5. The examination shall have been conducted by examiners specially qualified; it shall have extended over not less than four days, one of which shall have been devoted to practical work in a laboratory, and one to practical examination in, and reporting on, subjects which fall within the special outdoor duties of a medical officer of health. The rules as to study shall not apply to—(*a*) Medical practitioners registered, or entitled to be registered, on or before Jan. 1st, 1890; (*b*) registered medical practitioners who have for a period of three years held the position of medical officer of health of any county, or to any urban district of more than 20,000 inhabitants, or to any entire rural sanitary district.

"II. These rules shall apply to all diplomas granted after January 1st, 1894, provided that the rules passed by the Council on June 1st, 1889, and November 25th, 1890, shall continue to apply to candidates who had commenced special study in Sanitary Science prior to January 1st, 1894.

"III. The Council shall appoint an Inspector or Inspectors of Examinations in Public Health, with special instructions to report to the Council whether the examination of each body does or does not give evidence on the part of candidates passing such examination of a distinctively high proficiency, scientific and practical, in each and all of the branches of study which concern public health."

Note C. The Public Health Act of 1875.—Section 286: "Where it appears to the Local Government Board, on any representation made to it that the appointment of a medical officer of health for two or more districts situated wholly or partially in the same county would diminish expense, or otherwise be for the advantage of such districts, the Local Government Board may by order unite such districts for the purpose of appointing a medical officer of health, and may make regulations as to the mode of his appointment and removal by representatives of the authorities of the constituent districts, and as to the meetings from time to time of such representatives, and the proportion in which the expenses of the appointment and of the salary and expenses of such officer are to be borne by such authorities, and as to any other matters (including the necessary expenses of such representatives) which, in the opinion of the said Board, require regulation for the purposes of this section; and no other medical officer of health shall be appointed for any constituent district, except as an assistant to the officer appointed for the united districts, provided that no urban district containing a population of 25,000 and upwards, or (in the case of a borough) having a separate court of quarter sessions, shall be included in any union of districts formed under this section without the consent of the local authority of such district or borough. Not less than twenty-eight days' notice that it is proposed to make an order under this section shall be given by the Local Government Board to the local authority of any district proposed to be included in the union, and if within twenty-one days after such notice has been given to any such authority they give notice to the Local Government Board that they object to the proposal the Local Government Board may include their district in the union by a provisional order, but not otherwise. There may be assigned by the Local Government Board to the district medical officer of any union comprising or coincident with any constituent district such duties in rendering local assistance to the medical officer of health appointed for the united districts as the said Board may think fit; and such district medical officer shall receive, in respect of any duties so assigned to him, such additional remuneration to be paid by the local authority or authorities of the district or districts within which his duties under this section are performed as those authorities may, with the approval of the Local Government Board, determine."

Note D. The Local Government (England and Wales) Act of 1888.—Section 17: 1. The council of any county may, if they see fit, appoint and pay a medical officer of health or medical officers of health who shall not hold any other appointment or engage in private practice without express written consent of the council. 2. The county council and any district council may from time to time make and carry into effect arrangements for rendering the services of such officer or officers regularly available in the district of the district council, on such terms as to the contribution by the district council to the salary of the medical officer or otherwise as may be agreed, and the medical officer shall have within such district all the powers and duties of a medical officer appointed by a district council. 3. So long as such an arrangement is in force the obligation of the district council under the Public Health Act, 1875, to appoint a medical officer of health shall be deemed to be satisfied without the appointment of a separate medical officer.

THE CLINICAL SIGNIFICANCE OF ACCENTUATED SECOND SOUND.

BY SYDNEY RINGER, M.D., F.R.C.P. LOND., F.R.S.;
AND
ARTHUR G. PHEAR, M.B. CANTAB., M.R.C.P. LOND.

GREAT stress has been laid by many writers on the diagnostic and prognostic value of the study of the second sound; yet the very complexity of the conditions which determine its character detracts largely from its usefulness in practical diagnosis. It is with the object of indicating this complexity, as well as in the hope of throwing light on some of the many varieties which the second sound presents, that we approach this subject, on which so much has already been written. The intensity of the second sound as heard at the surface of the body is dependent on two factors: (1) tension, by which is largely determined the actual loudness of the sound at the point of its production; and (2) the thickness and nature of the tissues which intervene between the point of production and the surface of the body. The relation which exists between tension and the character of the second sound will first be considered.

I. THE INFLUENCE OF TENSION.

It has been placed beyond dispute that this sound is produced at the aortic and pulmonary semilunar valves, these structures becoming suddenly tense as they are closed and so thrown into a state of vibration. There is, however, still some difference of opinion as to the precise mechanism of the closure of the valves. Broadly speaking, the closure must be due to an excess of arterial over intraventricular pressure; yet it cannot be supposed that the valves close the moment the arterial exceeds the intraventricular pressure; for thus the force of closure would be constant, no matter how high the arterial tension, and the loudness of the second sound, apart from modification by conduction, would also be constant. Nor is the closure the result of an intraventricular negative pressure, since it occurs before the ventricle has begun to relax. A more probable explanation is as follows. When the ventricle contracts its contents are forcibly propelled into the aorta, and behind this mass of advancing blood a negative pressure is developed as the result of inertia; this leads to a backward oscillation of the blood in the direction of the ventricle, and it is this actual reflux, increased perhaps by the elastic recoil of the distended artery, which impinges on the semilunar valves and causes them to close.[1] On these grounds

[1] See Text-book of Physiology, by Michael Foster; vol. i., p. 246. 1883

it might be supposed that the more forcibly the blood was ejected from the heart into the artery the greater would be the backward oscillation towards the ventricle, and the more forcibly would the valves be closed; a strongly acting heart combined with comparatively empty arteries would thus favour forcible closure of the valves and the production of a loud second sound. As a general rule, however, whatever the physiological explanation may be, it is found that high arterial tension is associated with loud second sound (apart from modification by conduction); this has long been recognised in clinical experience, and has recently been confirmed by experiments, kindly performed for us by Dr. Bradford, in the laboratories of University College. In the first experiment a dog was anæsthetised and the necessary steps were taken for obtaining a record of the aortic blood pressure. At first the vagi were kept intact and thereby the path along which inhibitory impulses pass to the heart was maintained uninterrupted; it was then found, as was expected, that compression of one or both femoral arteries produced no rise of blood pressure and that compression of the abdominal aorta produced only a very slight rise; the character of the second sound remained unmodified. Both vagi were then divided and the animal was curarised; the pulse immediately became frequent, weak, and regular, having previously been slow and very irregular. The thoracic aorta was then compressed and the blood pressure immediately rose to nearly double its original height, this rise being accompanied by a very notable intensification of the second sound. It may be mentioned that we have satisfied ourselves in the wards that simultaneous compression of both femoral arteries causes no modification whatever of the intensity of the second sound—a result which might be anticipated on physiological grounds. In another experiment a portion of the chest wall of a dog was removed, and the pericardium opened, so that a stethoscope could be directly applied to the pulmonary artery and aorta close to their origins from the heart; it was found that the second sound over the aorta was very much louder than over the pulmonary artery; this is in accordance with the difference of blood pressure in the two vessels, that in the aorta exceeding that in the pulmonary artery in the proportion of 5 to 1.[2] As before, after division of the vagi, pressure on the thoracic aorta caused a marked accentuation of the aortic second sound immediately consequent on the rise of blood pressure, the pulmonary second sound remaining practically unmodified. These experiments confirm the current doctrine that increased tension is associated with increased loudness of the second sound, the pulmonary or aortic sound being accentuated according as the high tension exists in the pulmonary or systemic arteries. Here we are met by the difficulty of distinguishing between the sounds produced respectively at the aortic and pulmonary orifices. These orifices are both situated to the left of the middle line, the aortic at the level of the lower border of the third costal cartilage, behind, below, and slightly to the right of the pulmonary opening, which lies at the level of the upper border of the same cartilage, in part behind the sternum, and in part to the left of the left border of that bone. The relative position of the valves and of the main vessels warrants the ordinary assumption that although the second sound as heard at the surface of the chest is a mixed sound, consisting partly of aortic, partly of pulmonary elements, yet the pulmonary vibrations predominate to the left of the sternum, while the vibrations produced at the more deeply-seated aortic orifice are conducted most readily to the chest wall along the aorta, which becomes superficial to the right of the sternum; thus the sound heard to the right of this bone has come to be spoken of as the aortic second sound, that to the left as the pulmonary second sound.

A means of more precise distinction between these two elements of the second sound is suggested by the phenomenon of reduplication. In a series of cases in which the second sound was reduplicated we found almost without exception that the double sound was heard much more distinctly at the base than at the apex, and to the left than to the right of the sternum; in the majority of cases a single sound was heard to the right of the sternum, the double sound being audible solely on the left. If the reduplication be due, as is considered by most authorities, to the asynchronous closure of the pulmonary and aortic valves, these observations indicate that the second sound as heard to the left of the sternum is of double origin, both pulmonary and aortic; while the sound heard to the right of the sternum is produced, as a rule, exclusively by vibrations generated at the aortic orifice. The interpretation of reduplication just given is the one most generally accepted. Sir William Broadbent[3] also notices that the reduplication is usually most distinct at the base, and best heard over the left edge of the sternum, at the level of the third space. He adds that it is occasionally more distinct at the apex than elsewhere. Walshe,[4] after enumeration of all the varieties of reduplication which have fallen under his notice, gives as the most common of the series doubled second sound at the base; he does not notice whether this is heard more frequently to the left or to the right of the sternum. Dr. Sansom[5] maintains that in the great majority of cases the audibility of the phenomenon is not marked at the base of the heart, while it is very manifest near the apex; this is one objection that he raises to the current interpretation, arguing that asynchronous closure of the pulmonary and aortic valves should be heard better at the base than about the apex. He calls attention to the large number of cases of mitral stenosis in which this reduplication is heard, and notices that in these cases the aortic tension is very low; it is unlikely, he maintains, that under such conditions the aortic second sound will be audible over a wider area than is the normal aortic second sound; he holds that in these cases the first element of the reduplication is the normal second sound, the second element being due to a sudden tension of the mitral valves, produced after the relaxation of the left ventricle by the forcible entrance of the blood, which, in the condition of obstruction at the mitral orifice, has been held in considerable tension in the left auricle and pulmonary veins. We are unable to understand how, even after the relaxation of the ventricle, the blood can enter through the contracted mitral orifice with any great degree of force, or how the diseased and thickened valves can be thrown into such a condition of tension as to produce a valvular sound simulating the second sound; such a sound, too, occurring after the ventricular relaxation, would be late in the course of diastole and remote from the second sound. In our experience, which accords in this respect with that of Walshe and Broadbent, those cases in which the reduplication is more audible about the apex than elsewhere do not comprise the bulk of cases of reduplication, but are very uncommon, by far the most frequent seat of reduplication being the base.

The conclusion that the pulmonary element usually forms no part of the second sound as heard to the right of the sternum is further borne out by those cases of aortic disease in which the valves are damaged to such an extent that they fail to close; or, being thickened and working stiffly, they do not close with the abruptness necessary for the production of a sound. In these cases no second sound is audible over the second right interspace, although the pulmonary valves are acting efficiently, as can be ascertained by auscultation over the second left interspace. How readily sounds produced at the aortic orifice are conducted to the surface at the left of the sternum is illustrated by the murmur of aortic regurgitation which is frequently heard more loudly over the second left than over the second right interspace.

There is some variety of opinion as to whether the second sound heard to the right or to the left of the sternum in health is the louder of the two; the importance of this matter is obvious if any stress is to be laid on accentuation of the sound on one side or the other; for it is only by comparison that such accentuation can be determined to exist. Many observers, among them Walshe[6] and Dr. Byrom Bramwell,[7] speak of the sound heard to the right of the sternum as the louder. Broadbent[8] finds the pulmonary sound to be usually louder than the aortic, and suggests that this is due to the superficial position of the pulmonary artery. Our observations agree with those of Broadbent only in part; we find the second sound to be louder on the left side than on the right, not among those who are in good health, but in individuals who are pulled down and weakened by illness in one form or another. Thus in the medical wards we have found in the large majority of cases that the second sound as heard over the second left interspace is notably louder than that heard over the second right interspace, all cases

[2] Bradford and Dean: Journal of Physiology, vol. xvi., p. 40.

[3] The Pulse, p. 68. 1890.

[4] Diseases of the Heart, p. 73. 1873.

[5] Diagnosis of Diseases of Heart and Thoracic Aorta, pp. 215 et seq.

[6] Op. cit., p. 80.

[7] Diseases of the Heart and Thoracic Aorta, 1884, p. 142.

[8] Op. cit., p. 56.

of course, being excluded in which there was any obvious cause of increased pulmonary tension, such as cardiac or lung disease. The difference is usually a striking one and readily detected. Among healthy individuals, on the other hand, and among those whose illness is not sufficiently debilitating to necessitate confinement within doors, as in the bulk of hospital out-patients, we find no such predominance of the second sound to the left of the sternum; there is usually no striking difference between the two sides, any slight excess lying, as a rule, to the right. No doubt all observers have been struck by the great loudness of the pulmonary second sound in chlorosis and the severer forms of anæmia; this, we believe, indicates increased pulmonary pressure and shows that there is some impediment to the free onflow of blood. That an impediment exists to the return of blood to the right side of the heart is indicated by the condition of the veins of the neck, which may be seen to pulsate; this pulsation may be of the physiological type, the collapse of the veins being very sudden and occurring at the beginning of the ventricular systole; in the more profound anæmias the pulsation assumes the pathological type, the filling of the veins corresponding with the cardiac systole and indicating tricuspid regurgitation, whether a murmur be audible or not;[9] the incompetence of the tricuspid valve is due, no doubt, partly to the increased lateral pressure and partly to diminished resistance and incomplete contraction of the right ventricle. A similar condition of the left ventricle may doubtless arise as regards diminished resistance and incomplete contraction, leading to mitral regurgitation even when no mitral murmur is audible, and thus causing increased pulmonary tension and accentuated pulmonary second sound. This would explain, in part at least, the loudness of the pulmonary second sound in anæmic individuals and in those who are suffering or convalescent from severe and weakening illness. On improvement of the general health and treatment of the condition of the blood the pulsation, both physiological and even pathological, disappears, and at the same time the intensity of the pulmonary second sound is lessened, indicating that the auriculo-ventricular valves on both sides are again competent.

Nor is it necessary to assume actual regurgitation of blood through the mitral valves to account for the increased tension in the pulmonary system and the loud pulmonary second sound. Just as the veins of the neck may be distended and may show pulsation without any incompetence at the tricuspid orifice, as a result solely of weak action and incomplete emptying of the right ventricle, so the immediate consequence of feeble action on the part of the left ventricle is incomplete expulsion of its contents, followed by accumulation of blood in the pulmonary system, with rise of tension and increased loudness of the pulmonary second sound, and this though the mitral valves remain perfectly competent.[10] Weak action and diminished output from the left ventricle as surely lead to accumulation and rise of tension in the pulmonary system as does actual backflow of blood through the mitral valve.

A brief reference is needed to mitral disease—both obstructive and regurgitant,—emphysema, and other pulmonary diseases, as common causes of accentuated pulmonary second sound. The mechanism of this is obvious. A narrowed mitral orifice presents an obstruction to the onward flow of blood; incompetence of the mitral valve permits an actual backward flow; and both conditions lead to engorgement of the pulmonary vessels, with increased tension. In emphysema the obstruction lies in the small lung vessels themselves, and the rise of tension is limited to the arterial side of the pulmonary system; it frequently happens in the last-mentioned disease that the accentuation of the second sound is obscured by the increased thickness of lung tissue which intervenes between the heart and chest wall.

Thus both experiment and clinical observation clearly show that high tension causes a loud second sound. It is, however, by no means clear that with low tension this sound is necessarily weak; indeed, we have met with several casesin which the opposite appears to hold good, low tension, as shown by a soft and compressible radial pulse, being associated with a loud and well-marked second sound. As an instance, a case of tetanus may be quoted, with temperature of 106° F. and pulse 160 to the minute, weak, and easily compressed; yet the second sound was loud and ringing—louder than in many healthy people. The same point is illustrated by a case of pneumonia, very prostrate, an hour before the fatal termination; in this the second sound was as loud as it is often found in health, although the radial pulse was hardly perceptible. Such cases are difficult to explain. Broadbent,[11] in speaking of accentuation of the aortic second sound, says that not only with high blood pressure is the sound accentuated, but also with low blood pressure, provided this is associated with fair ventricular action, the contents of the ventricle being shot quickly into the aorta, so that there is a sharp elastic rebound, causing the second sound to be loud. This will not hold good as an explanation of the cases quoted above, in which not only was there low tension, but also the heart's action was undoubtedly extremely feeble.

II. MODIFICATION BY CONDUCTION.

Little attention is usually drawn to the part played by conduction in influencing the intensity of the second sound, yet modification by conduction is of constant occurrence and of corresponding importance and calls for more than a passing comment. Byrom Bramwell[12] distinguishes variations in production from variations in conduction and draws attention to various conditions which may give rise to *apparent* increase or decrease in the loudness of the sound. He mentions emaciation, exposure of the heart by forward displacement or by retraction of the lung, and consolidation of lung as increasing, and thickness of chest walls, emphysema, or pericardial fluid as decreasing the apparent loudness of the second sound. Broadbent[13] shows that accentuation is produced by slight causes and may be simulated by uncovering of the conus and artery from retraction of the lung; such sources of fallacy, he says, are easily eliminated. Other writers are content with the mere enumeration of such conditions; and the influence of conduction on the estimation, at its true value, of accentuated second sound cannot be said to have generally met with the notice it deserves. The second sound in its conduction is modified by two factors: (1) the thickness and (2) the nature of the tissues intervening between the semilunar valves and the stethoscope. The more homogeneous the tissues, the louder is the sound; it is conducted through continuous better than through contiguous structures. Another condition to be taken into account is the degree of pressure employed with the stethoscope. We have shown previously[14] that increase of pressure causes a weakening of the second sound; in some cases we have been able almost to obliterate it. In the same paper we have dwelt on the importance of posture. A very slight inclination to one side is sufficient to intensify the sound as heard on this side; such accentuation is more readily produced on leaning to the left than to the right and may persist for some minutes after the resumption of the original posture; unless the individual be lying precisely on his back, this may prove to be an important source of fallacy. The intensity is obviously influenced by the condition of the chest-wall, the sound being weaker in fat and well-nourished people than in thin people; this factor affects both sides equally. Conduction to the surface of the chest occurs much more readily through an interspace than through a rib cartilage, since the tissues are both thinner and more homogeneous in the interspace than at the cartilage.

We wish specially to indicate the part played by healthy lung tissue in modifying the loudness of the second sound. That such modification occurs to a notable degree may be readily ascertained by determining the upper level of cardiac dulness and applying the stethoscope above and below this line; the second sound is found to be decidedly weaker above, where lung tissue intervenes between the heart and the chest wall, than below, where the absence of lung tissue is shown by the non-resonant percussion note. In the region of the apex-beat it is heard frequently as distinctly as at the second left interspace. In cases where the heart is wholly uncovered by lung tissue, as indicated by obtaining well-marked dulness as high as the second left interspace, we have found the second sound to diminish gradually in intensity on descending, no point being reached at which it again becomes loud; a similar gradual weakening of the sound from above downwards may be observed in cases

[9] Pulsations and Murmurs in the Great Veins of the Neck. By Ringer and Sainsbury. THE LANCET, Nov. 28th and Dec. 5th, 1891.

[10] The relation between inefficient working of the left ventricle and pulmonary tension has recently been discussed by Bradford and Dean, loc. cit., p. 89.

[11] Op. cit., p. 58.

[12] Op. cit., p. 143 et seq.

[13] Op. cit., p. 60.

[14] Some Practical Points concerning the Diagnosis of Cardiac Murmurs. THE LANCET, Feb. 10th, 1894.

where the heart is entirely covered by lung, as shown by absence of cardiac dulness. The ready conduction of the aortic second sound along the wall of the left ventricle has been noted by Broadbent,[15] who observes that it is heard at and to the left of the apex, frequently as distinctly as in the aortic area, sometimes far more so. He recommends the apex as an area over which the pure aortic sound may be studied apart from the pulmonary sound, which, he says, is not conducted along the wall of the left ventricle, though it may be heard well to the right of the apex when the right ventricle is enlarged by dilatation and hypertrophy. It is not clear to us how the pulmonary and aortic sounds can be in this manner differentiated, except on the assumption that the aortic sound passes solely along the wall of the left ventricle, not being conducted at all to the right of the septum, and, similarly, that the pulmonary sound is confined in its conduction to the wall of the right ventricle—a somewhat arbitrary route for the sound vibrations to follow.

The modifying influence of healthy lung tissue is further shown by the effect of respiration. As the lung becomes expanded on deep inspiration the second sound becomes weak, and remains weak so long as the breath is held at the summit of inspiration; it frequently also becomes reduplicated, as has been noticed by Walshe[16] and Broadbent.[17] During quiet breathing there is a similar, but usually less marked, variation in the intensity of the second sound, though in a few cases we have noticed the respiratory variation to be very great, even with perfectly normal respiration. With deep inspiration the margin of the left lung as defined by percussion moves downwards, so as to cover more of the heart; and over the whole of the increased area of resonance the second sound becomes weaker, remaining as loud as before below the lower limit of resonance, where the heart is uncovered by lung. Not only thus in the same individual, under different conditions of respiration, do the anterior limits of the left lung vary, but in different individuals, we are convinced, there is great variation in the extent to which the heart is covered by lung, independently of pulmonary or cardiac disease. This opinion we are led to both by percussion and post-mortem examination. We find that the variation is much greater on the left side—affecting the left lung—than it is on the right. Any variation in the degree to which the left lung covers the pulmonary vessel will obviously modify the loudness of the pulmonary second sound, and the impression may readily arise that this sound is accentuated unless the absence or scantiness of lung-tissue be ascertained by careful percussion. A brief allusion must be made to the effect of emphysema, which we find in the majority of cases is to weaken the second sound on both sides equally, notwithstanding the high tension which must be present in the pulmonary artery. The sounds may be extremely weak. In a case under our observation no heart sounds at all were audible over the cardiac area; they were faintly heard at the epigastrium. Retraction of diseased lung and uncovering of the heart are common causes of apparent accentuation of the pulmonary second sound; the pulmonary artery may lie in such close apposition to the chest wall that the closure of the valves can be felt.

It has been our endeavour to make it clear that the factors which determine the loudness of the second sound are numerous and complex, and that to unravel the possible causes of accentuation in any given case may be a task of great difficulty. This difficulty, we believe, can only be overcome by the consideration of other signs and symptoms, which by themselves are often sufficient for the formation of a correct diagnosis, and in the absence of which no trustworthy conclusion can be drawn from the study of the second sound. Rather than aid diagnosis the discovery of an accentuated second sound renders necessary a further and elaborate piece of differentiation if the cause of the accentuation is to be discovered.

[15] Op. cit., p. 55. [16] Op. cit., p. 75. [17] Op. cit., p. 68.

BEQUESTS AND DONATIONS TO HOSPITALS.—By the will of the late Mr. John Steele, of Boroughbridge, Yorkshire, charities have benefited to the extent of £10,000. The Harrogate Bath Hospital has received £2000, the Cottage Hospital £1000, and the Leeds Infirmary £2000.—The late Mr. Thomas Nelson, of Newcastle, J.P., formerly a member of the City Council, has left £1000 to the Newcastle Royal Infirmary.

A FURTHER CONTRIBUTION ON AN EPIDEMIC SKIN DISEASE.[1]

BY THOMAS D. SAVILL, M.D. LOND.

WHEN attention was drawn to this malady in the year 1891,[2] 424 cases were known to have occurred in six different institutions in London. It was defined by me as a contagious malady in which the main lesion is an inflammatory condition of the skin, sometimes attended by the formation of vesicles, always resulting in desquamation of the cuticle, usually accompanied by a certain amount of constitutional disturbance, though without pyrexia, and running a more or less definite course of seven or eight weeks.

It would appear from subsequent experience, first, that the constant presence of desquamation of the cuticle is a feature of great diagnostic value; and, second, that the disease may occur sporadically, without epidemic relationship, and in a much milder form, especially when attacking the young. It would also appear that the outbreak of 1891 was an unusually severe one; that the disease is not rare, particulars having been collected of nearly 600 cases which arose in London during the three years 1891–93; and finally that, for reasons given, the name "general exfoliative epidemic dermatitis," suggested in 1891, besides being cumbersome, is not altogether appropriate. The term "epidemic skin disease" is preferable as indicating the conditions under which the malady first attracted attention.

The first section of the paper is occupied with a detailed description of epidemics which have been observed since 1891. In the Paddington Infirmary in the following year (1892) 12 fresh cases arose, and 2 were admitted which had arisen outside, all of which had the same character as the cases originally observed. This gave an attack rate of 2 per cent., as compared with 19 per cent. the year before, and only one of the fourteen died.

In 1893 6 cases arose in the Paddington Infirmary, but none of them died.

In the Fulham Union Infirmary, in 1893, 3 cases occurred all of which were fatal.

A very important outbreak also occurred in 1893 in the Bethnal-green Workhouse, under the care of Dr. John Knox.[3] As many as 86 cases arose in the course of five and a half weeks (May 4th to June 10th), giving an approximate attack rate of 10 per cent. amongst the persons exposed to contagion. Five of them died, giving a case mortality of nearly 6 per cent. The type of these cases was very much milder than that at the Paddington Infirmary in 1891. They had, for the most part, all the typical symptoms of the disease—viz., anorexia, with sometimes vomiting and diarrhœa, and generally more or less weakness. Most of those attacked were middle-aged or elderly people, with one exception, a girl fourteen years of age. The skin affection began either with tiny papules or with erythema, having a tendency to symmetry, succeeded sometimes by serous exudation and *always* going on to desquamation of the cuticle. Though a large number of persons were attacked in a short time, the severity of the disease was much less pronounced. Evidence of this was afforded by the lower mortality, and the diminished tendency of the eruption to become universal, as compared with the Paddington and Marylebone cases in 1891.

SPORADIC CASES.

Reference is next made to the fact that even in 1891 many sporadic cases came to light in the western districts of London, including one which was admitted into the Paddington Infirmary, whose history is narrated; and two others were admitted in 1892. Two sporadic cases are also referred to which were narrated in 1892.[4] Another sporadic case occurred in the practice of Mr. Thoresby Jones, which was seen by me in consultation.

A boy aged ten years, had been attacked by an eruption three weeks before, starting in groups of red papules on the thighs, first on the right, then on the left, with more or less symmetry. A day or two later the skin became flaky, and

[1] Abstract of a paper read in the Dermatological Section of the International Medical Congress at Rome.

[2] THE LANCET, July, 1891; Med. Soc. of Lond., Nov. 5th, 1891; and British Journal of Dermatology, February and March, 1892.

[3] To whom I am indebted for particulars.

[4] Brit. Med. Jour., Jan. 9th, 1892. Drs. Cock and Evans.

the eruption spread to other parts; and, finally, nearly the whole body, excepting the back, was involved. The temperature had been a trifle elevated at first, but afterwards it became normal. There were no other constitutional signs observed. There was considerable shedding of the epidermis in bran-like scales over the greater part of the body, but that of the hands and feet came off in large flakes. Careful investigation failed to find any possible source of infection. The disease ran its course in about five weeks, and towards the end a little brother had a very slight eruption of what was, in all probability, the same malady.

CONDITIONS UNDER WHICH THE DISEASE BECOMES EPIDEMIC.

The malady had already been shown to be contagious, and from a study of nearly 600 cases I can now summarise the main conditions which I believe to be necessary for the spread of the disease, as (1) a predisposition in those exposed to infection, by reason of advanced life, or, in a less degree, debilitated health; (2) a collection of patients suffering from the disease in one place, favouring, it would seem, a concentration of the poison; and (3) certain obscure seasonal and meteorological conditions.

Nearly all the known cases have arisen between May and November—i.e., during the summer and autumn months—and there is certainly a marked tendency towards the spread of the disease at these seasons. As regards the other conditions necessary, no very precise information is yet attainable. In view of the fact that the disease in 1891 spread from ward to ward with great rapidity, the distance necessary for contagion need not apparently be very close; but, on the other hand, the free communication between these wards by means of medical attendants and nurses—for no isolation was attempted—would negative the value of this observation. But, again, the rapidity with which the disease spread in the Bethnal-green Workhouse, where eighty-six persons were attacked in different parts of the buildings in the short space of five weeks and a half, and where isolation was in some measure adopted, would tend to show that the malady may be spread some distance through the air.

DIAGNOSIS.

The large number of cases which have come to light during and since the year 1891 support the view that the disease is by no means a rare one. It is during the initial stage that mistakes in diagnosis are most liable to occur. At this time it may resemble many differently named diseases. The commonest mode of commencing is a papular rash, arranged more or less in constellations, and usually attacking symmetrical parts of the body. Next in order of frequency is an erythema. In mild cases this initial stage is very transient, lasting only a day or two. It is rapidly succeeded by the characteristic desquamation of the cuticle, which not only occurs in parts where the papules or erythema have been observed, but also in other places. In severe cases the papular or erythematous eruption is succeeded by thickening of the skin, which has a red excoriated surface, throwing off its epidermis in successive coats. Cases of average severity are without doubt more likely to be confused with eczema than with any other disease. The following are the chief clinical distinctions:—

Eczema.	*Epidemic Skin Disease.*
1. Attacks all ages, and children are very liable.	1. Children almost exempt; old people specially prone.
2. Gout is a marked predisposing cause.	2. Gout offers no predisposition.
3. Constitutional disturbance always moderate and never fatal.	3. Constitutional disturbance often severe, and may be fatal.
4. Dried crusts thrown off, but exfoliation of cuticle not a marked feature of the disease. Dermal thickening absent or moderate.	4. Epidermal exfoliation a very constant feature. It may occur in some places without previous eruption. Dermal thickening generally present.
5. Exudation generally more or less present.	5. Exudation may be slight, transient, or absent.
6. Course not definite.	6. Course fairly definite.
7. Not hitherto regarded as contagious or epidemic.	7. Undoubtedly contagious, and epidemic under certain conditions.

The three chief means of distinguishing the skin disease under consideration from other skin affections are (1) its commencement as a papular or erythematous eruption, which is followed in a few days by (2) desquamation of the cuticle (a symptom which is never absent) in bran-like scales or flakes; and (3) its more or less definite duration of six or eight weeks.

BACTERIOLOGY.

Both Dr. Risien Russell and I detected a characteristic diplococcus in the exudation and blood of the cases in 1891, but in two subsequent attempts I have been unsuccessful in obtaining characteristic cultures.

TREATMENT.

The efficacy of the creolin bath is again emphasised, and cases are mentioned where patients have relapsed on its cessation and recovered again on its renewal. Two pints and a half of a 1 per cent. solution are added to fifteen gallons of comfortably warm water, and the bath is administered once or twice a day. Good effects were also obtained from a 1 or 2 per cent. creolin ointment, ichthyol and tar soap, liquor carbonis detergens (1 drachm to the pint), Unna's oxide of zinc gelatin, and other remedies; but corrosive sublimate solution always did harm.

NOSOLOGY.

In its clinical features I still consider the disease to belong to the eczematous rather than to any other group of skin diseases, though visible exudation may very often be absent. It might be said that the constant presence of exfoliation forms an objection to its being so classified, and that it belongs to the exfoliative disorders; but it may also be urged, firstly, that pityriasis rubra, the most typical of exfoliative dermatites, which the epidemic skin disease also resembles, has been regarded as an eczematous disease by some authorities;[5] and, secondly, that the exudation, though apparently absent, has been detected on the under surface of the scales in some cases.

[In conclusion, attention was drawn to the interesting questions which arise out of a study of this disorder. The variety often presented by the rash, especially in its early stage, is a feature of considerable interest to those who study skin diseases from a clinical standpoint; for the essential cause of the different appearances is probably the same in all cases, though the resulting conditions resemble many different skin affections hitherto described by different names. To the pathological student it is of equal interest, not only by reason of certain points in its etiology and epidemic occurrence, but also from the part presumably played by microbes in the origin and development of this curious skin affection.]

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THE ACTION OF METHYLENE BLUE ON LÖFFLER'S BACILLI, WITH CLINICAL SUGGESTIONS.

BY BERTRAM HUNT, M.B. OXON., M.R.C.S. ENG.

IT is impossible to work with Löffler's bacilli without remarking the rapid and differential stain imparted to them by dilute solutions of methylene blue. Before entering upon the subject of this paper—namely, the action of the blue on the living bacilli—it seems worth while to mention a method I have found affording very pretty preparations, and to briefly describe the staining reaction generally, seeing that it led me to make my research, and forms, therefore, a fitting introduction. If bacilli grown for twenty-four hours on blood serum or on glycerine agar be thickly smeared with the needle on to the centre of a cover-glass, and if after drying and passing through the flame a drop or two of dilute stain be added to them, the colour is observed to enter the bacilli so quickly that in a few seconds the solution in their neighbourhood becomes colourless. On removing the excess of stain with filter paper and examining the preparation under the microscope, the differential character is at once apparent. The bacilli take only a comparatively light tint, but in some of them one or two dark blue points (pole granules) are visible, one at each end perhaps; in others, which are longer, three or four, one at each end, and one or two in the middle, marking, presumably, stages in fission;

[5] Liveing: Diagnosis of Skin Diseases, p. 98.

other forms, again, show a more irregular arrangement, very few bacilli being seen without them. If the preparation be now irrigated with a dilute solution of a second stain—for instance, Bismarck brown or methyl orange—the blue colour is observed to adhere to the pole granules, while yielding in the body of the bacillus to the fresh, and if at the right moment the superfluous counterstaining solution be removed a permanent preparation may be secured. Far better results are, however, obtainable if the preparation, after being darkly stained with the blue, be immersed for a second in a 10 per cent. solution of tannic acid, then well washed and irrigated as before. After this treatment the dark-blue points appear almost black, while it is possible to obtain a pure brown or yellow in the bacillus itself. These preparations are very pleasing to the eye, and are generally mistaken when shown to others for an excellent specimen of double-stained, spore-bearing bacilli. Since there appeared to be a reaction or elective affinity between certain parts of the bacillary protoplasm and the stain, it seemed advisable to investigate it in the case of the living micro-organism also. A description of cholera bacilli stained and motile is found in the second edition of Cornil and Babes' general treatise, but the first paper, dealing with the action of stains on living bacteria, is one by Birch-Hirschfeld.[1] He found that anthrax bacilli in fuchsin and methylene blue solutions—strength 1 in 700—although staining well underwent no diminution in virulence; and in his other experiments with typhoid bacilli he observed that the bacilli could take up the stain without losing their motility. The virulence of the latter was not tested. A precipitate, however, which formed in the solutions interfered with the microscopical examination.

Then in 1889 and 1890 came the introduction of various aniline colours as antiseptics by Beckh,[2] Penzoldt,[3] See and Moran,[4] Stilling,[5] Fessler,[6] and others. Many of the dyes were tried in these researches, the general testimony being that methyl violet was the most powerful in its action; for whereas solutions in bouillon of most of them, in a proportion of 1 in 70,000, was necessary to prevent the growth of the staphylococcus pyogenes aureus, methyl violet attained this end, even when so dilute as 1 in 600,000 and less, and a pure preparation of it under the name "pyoktanin blue" has, on Stilling's recommendation, already attained considerable success as an antiseptic dressing, a pyoktanin yellow being used in ophthalmic practice. It was also shown that such stains as rose bengale, safranin, pure methyl violet, methylene blue, &c., which contain neither arsenic nor phenol, had no deleterious effects when injected into living animals. Buchner[7] also published a paper in 1890 in which he describes the resistance offered by living typhoid bacilli to methyl violet, and, deeming the resistance to be defensive, suggests the probable antiseptic action of such substances.

Now I find that the resistance offered by diphtheria bacilli to methylene blue as a stain consists in the reduction of the blue by them to its leuco product. If, for instance, a drop or two of a solution of the blue be added to some bouillon culture of this bacillus in a test-tube, the colour is seen to become in the first place streaky and then gradually to disappear, a blue disc remaining at the surface; if the solution be shaken up with air the colour instantly returns, and this process of reduction and restoration may be continued indefinitely. That the blue is never reduced beyond its leuco product, is never destroyed, is shown by the fact that bouillon culture containing it may be corked up in a bottle for six weeks and yet become blue again when either shaken or poured out on to a flat surface. While the effects of this reduction—i.e., the oxidation of the protoplasm of such pathogenic bacilli with its clinical possibilities—forms the most important part of this paper, the process is an equally interesting one from a biological point of view, in that it may enable future observers to measure with some degree of accuracy conditions favourable or unfavourable to the vital activity of bacteria. The question will, however, be seen to be a somewhat complicated one. Before describing this reaction and its effects in detail it is better to contrast the behaviour of the other stains, and to mention various bacteria able to reduce the blue. It is to be regretted that I have only been able to investigate the reaction with a few species. Anthrax bacilli, staphylococcus pyogenes aureus, sarcinæ, and generally such bacteria as are commonly found in putrefaction, all reduce it. Streptococci do not. Of some fifty other stains which I have similarly tested, there are many found to be reducible, but only three in which restoration of colour is possible—namely, methylene blue, toluidine blue, and safranine; the latter is, however, very feebly if at all reducible by the Löffler bacilli and far more slowly by the others than are the blues. The stains easily reducible by Löffler's bacilli are phenyl blue, iodine green, malachite green, and one or two others; the colours are not restored. Certain fluorescent bacilli grow in weak solutions of all the dyes, being apparently highly resistant to their antiseptic action, and they reduce all of them permanently, the two blues and safranine excepted. Even methyl violet and pyoktanin in very weak solutions do not escape this fate. To ascertain whether this failure on the part of the diphtheria bacilli to reduce such stains as safranine and pyoktanin was due to their relatively more powerful antiseptic action, methylene blue was also added to the solution, and its prompt reduction, in spite of the fact that the bacilli effecting it appeared as red or violet precipitates in the tubes, showed that it was not due to this cause. Attention will be drawn again to this point, as it is of importance. Although no reference or paper can be found it is difficult to believe that this reduction of the blue by bacilli can have escaped Ehrlich's notice. The only previous mention of such a process that I can discover is by Raulin,[8] who observed on adding indigo, carmine, orseille, and safranine to fermenting solutions that the colours disappeared, to return on shaking up with air. He writes of the respiratory function of the bacteria, and concludes that the colours conveyed oxygen to them to their benefit. Whether this conveyance of oxygen is advantageous or not to pathogenic bacteria will be gathered from my research. See and Moran[9] also noticed in their experiments that solutions of the stains when exposed to the light lost their colour, but do not seem to have considered that this might be due to the action of the bacteria in their solutions. Light plays no part in either the reduction or restoration of the blue described in this paper.

With the hope of gaining some definite knowledge of the amount of oxygen conveyed by the blue I tried whether sugar would reduce it. On boiling a weak solution of grape sugar containing the blue no reduction took place, but the addition of one drop of a saturated solution of sodium carbonate to 5 c.cm. of the solution caused an instantaneous disappearance of the colour. Upon shaking the solution the colour returned, but the reduction at boiling temperature was so rapid that to see the colour it was necessary to cool the tube. The reduction was found to take place at 35° C., though more slowly. As shaking up with air invariably and instantly restored the blue colour, and as a disc of blue remained on the surface, it seemed reasonable to suppose that in a shallow layer continuous cumulative oxidation would take place. A little of the blue sugar solution was, therefore, poured into a Petri dish, and kept at 37° C. for twenty-four hours. The solution remained blue and on subsequent boiling did not lose its colour, showing thereby that the process was continuous under these conditions. An experiment was next made to determine the amount of oxygen set free by the reduction of 1 mgr. of the blue. This was found to be the equivalent of 2 c.cm. of a standard Fehling solution representing in 10 c.cm. 0·1 gr. of sugar. One milligramme of the blue is therefore reduced by 0·020 gr. sugar. The chemical action observed on titration is as follows: As each drop of the Fehling enters the solution the dark-blue colour is restored, but only to at once disappear a second time; and this going and coming of the colour repeats itself until the titration is complete—i.e., the copper salt yields its oxygen to the reduced blue, which then in its turn passes it to the sugar. As an end reaction it is very sharp, but the blue if used for this purpose would introduce an error by oxidising a portion of the sugar on its own account. Normal urine was also found to reduce the blue in the presence of alkali, and it would be interesting to determine the substance effecting this reduction.

[1] Archiv fur Hygiene, Band vii., S. 341.

[2] Ueber die antibakterielle Wirkung einiger Anilinfarbstoffe. Nürnberg, 1889.

[3] London Medical Recorder, February, 1890.

[4] Méd. Mod., Paris, 1889-90, i., 441 and 560.

[5] THE LANCET, Nov. 8th, 1890, and April 18th, 1891. Anilin-Farbstoffe als Antiseptica und ihre Anwendung in der Praxis; two parts. Strassburg, 1890. Ueber die Einführung von Anilinfarbstoffen in das Blut, Wiener Klin. Woch., 1891, p. 263.

[6] Münchener Med. Woch., 1890, p. 434.

[7] Ueber den Farbungswiderstand lebender Pilzzellen. Centralbl. für Bakt., 1890, i., 735.

[8] Observations sur l'Action des Micro-organismes sur les Matières Colorantes: Compt. Rend. de l'Acad. des Sciences, Paris, 1888, 445.

[9] Loc. cit

It is now possible to return to the diphtheria bacilli. The fact that the blue, when added to freshly filtered cultures of various ages and to others in which the bacilli had been killed by heat, remained indefinitely blue, proved that the action was due to living bacilli, and showed that the blue could not be expected to oxidise the poison. The bacilli during and after the reduction of the stain appear to be colourless, but there is an obvious addition to the sediment in the tube. Under the microscope the solution is seen after a few minutes to become colourless, while the bacilli are stained a very faint blue colour, the pole granules being invisible; then the colour begins to fade in the bacilli, a crystalline deposit, partly consisting of long needles, simultaneously forming in their vicinity. Although to the naked eye such a preparation is colourless, or at the most a darker shade of yellow, these crystals have under the microscope a light green colour. On removing the glass covering the hollow in the slide the crystals redissolve, the colour slowly returns, and the bacilli become once more pale blue in tint. This sediment of crystals is apparently the precipitate already referred to, which was observed by Birch-Hirschfeld. It was noticed that bouillon cultures containing 1 in 10,000 of the blue effected the reduction in six or seven minutes at the temperature of the room. To ascertain the effect of temperature upon the process methylene blue was added to 15 c.cm. of bouillon culture twenty-four hours old in the proportion of 1 in 10,000, and 5 c.cm. of this solution were poured into each of three test tubes, which, together with two control tubes, were placed in a large water bath. The temperature of the bath was then slowly raised, and as each reduction occurred the tubes were shaken in the water, to avoid as far as possible any loss of heat.

TABLE I.—*Showing the Time required for Reduction in Minutes and Seconds in Tubes 1, 2, and 3.*

Tube.	32° C.	33° C.	35° C.	38° C.	40° C.	42° C.	44° C.	46° C.	48° C.	50° C.	52° C.	53° C.	54° C.	55° C.
1	3′	2′ 45″	2′ 15″	2′	1′ 30″	1′ 30″	1′ 20′	1′ 25″	1′ 30″	1′ 40″	2′ 15″	2′ 20″	3′ 15″	*
2	3′	2′ 40″	2′ 15″	2′	1′ 30″	1′ 30″	1′ 20″	1′ 20″	1′ 20″	1′ 50″	2′ 0″	2′ 20′	2′ 30″	*
3	3′	2′ 45″	2′ 10″	2′	1′ 35″	1′ 25″	1′ 20″	1′ 20″	1′ 20″	1′ 55″	Removed.			

* No further reduction.

It is apparent that instead of the change occurring most rapidly at the temperature found most suitable to the growth of the bacillus, it reaches its minimum of time at 44° C. to 48° C., even at 53° C., being almost as rapid as at 35° C. The tubes 1 and 2 were removed with the control tubes from the bath after one minute at 55° C. and allowed to cool, but no further change occurred, and the bacilli were seen to be darkly stained; on the other hand, on adding methylene blue to the control tubes reduction took place, though after a considerable interval of time. Tube 3 was removed at 50° C., but replaced as soon as the water bath had cooled to 54° C. As the temperature fell the times observed were 54° C. to 49° C. seven minutes, then 49° C. to 45° C. ten minutes, and after that no reduction, but again an intense staining of the bacilli. The bacilli are, therefore, less resistant to heat after repeated oxidation by the blue, and the temperature at which they take up the oxygen most rapidly is what may be called their temperature of attenuation. Although Roux and Yersin showed that a temperature of 45° C. would attenuate these bacilli, it was considered best to repeat their experiment. A twenty-four hours' bouillon culture was divided for this purpose into two portions, one being kept at 45° C. for four hours, and four guinea-pigs were then injected, two receiving each 0·4 c.cm. of the unheated and two each 0·8 c.cm. of the heated. The controls died within thirty hours, the experiment animals, on the other hand, living eight and nine days respectively. Of the part played by oxygen in the attenuation of bacteria in the classical experiments of Pasteur, an account will be found in Professor Burdon Sanderson's Croonian Lectures.[10] The difference in action between the shallow layer and the deep solution has already been suggested, and proof of the continuous oxidation taking place in the former was afforded by the sugar solution; the effect upon the bacilli of such continuous oxidation has now to be considered, the temperature experiments indicating the results likely to obtain. In the shallow layer, while the blue remains apparently unchanged, it is in reality constantly at work; it keeps its blue colour, because oxygen is reabsorbed from the air as fast as it is removed by the bacilli, and this action of the blue, this ability to do constant work while itself undergoing no obvious chemical change, may be compared to ferment action, and so regarded it is very instructive. It may, however, be objected that the blue, simply as blue, exerts an influence injurious to the micro-organisms, and although it is impossible to deny that methylene blue, as such, is no doubt to some extent harmful to the bacilli, or that the reduction is self-defensive on their part, its germicidal action can be proved to be directly due to the oxidation. Whether, too, this process is harmful to the bacilli by reason of its oxidation of their protoplasm, or merely so in that the bacilli fall at last victims to fatigue in their never-ending struggle to overmaster the blue, is difficult to answer, and it might be urged that such exhaustion is brought about directly by the oxidation. A description of the antiseptic action of methylene blue is reserved until later. It is necessary, however, to state at this point that Löffler's bacilli grow, feebly it is true, in bouillon containing the blue 1 in 150,000, but that pyoktanin in bouillon 1 in 600,000 remains sterile, this result agreeing with those of other observers. Pyoktanin as an antiseptic is, therefore, four times stronger than the blue, but as a germicide it is found to be weaker, provided always that air has access to the blue. The action of the two stains on living bacilli is very different. Pyoktanin is not resisted; the bacilli stain fairly well and quickly; moreover, that this staining does not kill them I have already shown. On the other hand, the bacilli are not stained by the blue until vanquished; they fight against it as long as they have the strength to do so; and the end of the struggle, the exhaustion and death of the bacilli, is indicated by their becoming well stained. In fact, this staining of the bacilli forms what may be called a sharp-end reaction in titration experiments with antiseptics. For example, a trace of carbolic acid is added with some of the blue to a bouillon culture; after an interval, varying according to the amount of the acid in the solution reduction slowly takes place, and by shaking from time to time the process is observed to become slower and slower, until a time is reached when no further reduction occurs, and the bacilli are seen as a dark-blue precipitate lying at the bottom of the tube. This staining of the bacilli enables the observer to make a note that x carbolic acid kills the bacilli in y hours.

It will be gathered from what has been already stated that the germicidal action of the shallow layer manifests itself by the staining of the bacilli, the time required being found to depend partly upon the proportion of the blue in the solution and partly upon the fighting strength of the bacillary army, and the times mentioned below must therefore only be considered approximate. Fairly luxuriant twenty-four hours' bouillon cultures were used, and, after the addition of the blue, were poured out into Petri dishes, the depth of the solution varying from $\frac{1}{2}$ to $\frac{5}{10}$ of an inch, an amount suggested by the measurement of the blue disc in the test-tube experiments.

Proportion of methylene blue.	Time required to stain.
1 in 40,000	24 hours.
1 in 10 000	10 hours.
1 in 5,000	2 hours.
1 in 2,000	1 hour.

It will be apparent from this table that 1 in 10,000 methylene blue stains and kills the bacilli in ten hours; but if the stronger antiseptic pyoktanin be added in the same proportion, the violet culture may be incubated for six days, and yet be found able to reduce the blue upon its subsequent addition, a control tube proving that such reduction is not due to the violet. In the presence therefore of air the blue is the stronger germicide. The exact strength of methylene blue reducible by the bacilli is difficult to determine; it may be stated, however, that a forty-eight hours or even a luxuriant

[10] THE LANCET, Nov. 7th, 14th, 21st, and 28th, 1891.

twenty-four hours' culture is able to reduce it when added in a proportion of 1 in 1000, the reduction occupying about forty minutes at 37° C. The attenuating effect of the deep layer (i.e., initial reduction) and of the shallow layer (i.e., continuous reduction) are given in the following tables. The bacillus, with which all these experiments were conducted, was one of great virulence, obtained from membrane very kindly given to me by Professor von Ranke, to whom my best thanks are due. The guinea-pigs were not weighed; they were chosen as much alike in size as possible for each experiment, the larger of the selection being invariably used as controls.

attenuation is to be avoided; and it is in my own experience that stab cultures of these bacilli lying about a laboratory hold their virulence longer than stroke cultures under similar conditions. Sunlight is thought by many to act by oxidation, by the production of ozone in food media, and its action in the self-purification of rivers is just now receiving very great attention, the oxygen set free by the chlorophyll of water plants under its influence apparently playing an important *rôle*. Richardson [11] contends that peroxide of hydrogen is the agent to which this disinfectant action is to be ascribed. It is, therefore, a strong argument in favour of my hypothesis that direct sunlight is found to hasten this

TABLES II. AND III.—(*These tables are drawn together so that comparison may be easier.*)

Proportion of blue added.	1 to 50,000.	1 to 40,000.	1 to 10,000.	1 to 2500.	1 to 1500.	1 to 1000.
Initial Reduction in Test Tube.						
Time elapsing before injection; temperature 37° C.	4 hours	4 hours	4 hours	4 hours	½ hour	½ hour
Dose given	0·6 c.cm.	0·6 c.cm.	0·6 c.cm.	0·6 c.cm.	0·8 c.cm.	0·8 c.cm.
Result	Death: 24 hours	Death: 30 hours	Death: 30 hours	Death: A., 48 hours B., 56 hours	Recovery in 3 days	Nil.
Continuous Reduction in Petri Dish.						
Time elapsing before injection; temperature 37° C.	4 hours	4 hours	4 hours	1 hour	NOTE.—In the first four columns the guinea-pigs in the upper table serve as controls to those in the lower, the same culture being used. Other controls were also used, and receiving 0·4 c.cm., all died within thirty-two hours.	
Dose given	0·8 c.cm.	0·8 c.cm.	0·8 c.cm.	0·8 c.cm.		
Result	Death: 60 hours	Death: 58 hours	Recovery after illness with paralysis	Recovery in 3 days; two guinea-pigs		

A glance at these tables will show—1, that the reduced blue has no injurious action on the bacilli—at any rate, not in four hours; and 2, that very weak solutions, if allowed to remain blue—i.e., if able to pass oxygen in constant stream to the bacilli—have a very marked attenuating effect, the result with 1 in 10,000 being very striking. But however satisfactory these experiments may be in demonstrating the mitigation caused by the action of this continuous oxidation, it is obvious that a single large dose of oxygen—i.e., a stronger solution in the first instance—has a much greater effect. Theoretically, since the reduction, for example, of 1 to 40,000 is completed in about two minutes, exposed to the air it should occur thirty times an hour, and in four hours ought to convey more oxygen than an initial reduction of 1 to 1000. On consideration, however, it will be clear that in the first forty minutes it would only convey half as much.

The failure may also be partly explained by the fact that in shallow layers, where the air is quite still, as in an incubator, a certain amount of incomplete reduction is sometimes found to occur, and in the test tube the disc of blue to almost disappear, suggesting the formation of a layer of carbonic acid on the surface. On the other hand, exposed in the room to ordinary currents of air no reduction is seen. It must be said also that a good deal depends upon the depth of the layer. The shallower this is the more intense is the action of the blue, and the rapidity with which bacilli growing on agar plates succumb to the blue is astonishing, solutions of 1 to 2000 killing them in a few minutes. The amount of solution used in each of these attenuation experiments formed in the Petri dish, a layer having the thickness of an ordinary agar plate.

Many facts and arguments have already been brought forward to show that this conveyance of oxygen to the bacilli is not only harmful to them in their pathogenic quality, but actually leads to their destruction, and they may be briefly recalled as shown by: (1) the temperature experiments and staining of moribund bacilli in carbolic acid solution; (2) the germicidal action as compared with that of the pyoktanin; (3) the attenuation in the shallow layer; and (4) the hopeless struggle for mastery where air has access. Much remains, however, to throw additional light upon this question. Light and air are credited with being our natural and best disinfectants; it is a maxim to be found in every text-book on bacteriology that such bacteria as Löffler's bacilli must be protected from the action of these if their reduction of the blue by the bacilli, and to quicken to increased activity this appetite for oxygen, so fatal in its gratification. The experiment was performed with due care that no rise of temperature should falsify the result, and the temperature of the tubes was frequently taken. The reduction may be said to go in half the time in sunlight, but fatigue soon manifests itself.

(*To be continued.*)

SUCCESSFUL REMOVAL OF EXTENSIVE ORBITO-MAXILLARY SARCOMA.

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A MAN forty-two years of age was sent to me on Jan. 30th of this year with a letter from Dr. C. L. Lightfoot of Newcastle stating that six weeks previously a small tumour had been removed from the lower margin of the left orbit and also some "polypi" from the left nostril; microscopically these proved to be sarcomatous, and recurrence *in loco* had already taken place. An unfavourable prognosis had been given, and a more extensive operation was suggested as the only hope. The patient stated that he had had ague and rheumatic fever and jaundice; the "polypi" had troubled him since June, 1893; there were sharp shooting pain in the orbit, a discharge from the left nostril, and an unpleasant taste in the mouth. He had lost flesh rapidly. He was admitted into the London Temperance Hospital on Feb. 3rd, 1894, and Fig. 1 exhibits the condition of the parts as then seen. The left eye was normal, but diverted, and there was diplopia when the lids were separated; the skin over the swelling was red, adherent, and evidently involved. The left nostril was blocked by a fleshy growth, and the septum deviated to the right. He snored at night. The roof of the mouth appeared to be healthy, but the finger encountered growth in the left

[11] Transactions of the Chemical Society, 1893.

posterior naris. There was no obvious glandular enlargement; the urine and organs were healthy. The man looked cachectic, and weighed only 8 st. 4 lb. On Feb. 7th chloroform was administered by Dr. Wilde. Dividing the upper lip to the left of the middle line and opening the nose I found the greater part of the superior maxillary bone soft and friable; the antrum contained soft

FIG. 1.

growth, and the nose, ethmoidal and sphenoidal cells, and orbit were invaded. The orbit was cleared out, also the antrum down to the palate, which appeared healthy; the whole of the bones of the left side of the nose and inner wall of the orbit, as also the vomer and septum, had to be sacrificed. No soft parts were left between the roof of the orbit and the hard palate; the ethmoidal and sphenoidal and frontal sinuses were scraped out with a sharp spoon; all the implicated skin was cut away, the lip was united with a harelip pin and sutures, and chloride of zinc and opium paste on strips of

FIG. 2.

lint was packed against the exposed bones. The hæmorrhage was free but not very troublesome, as I plugged the posterior nares with lint and hung the head well over the end of the table. On Feb. 8th the patient had had very little pain. He had slept for eight hours. He was taking food well through a tube. On the 9th the pin was removed. Movements of the soft palate and the Eustachian orifices were seen on looking into the orbit. On the 17th the temperature was normal, there was no pain, and the sloughs were separating. On the 23rd he was gaining weight at the rate of about one pound a day. On March 2nd one or two suspicious places in the neighbourhood of the ethmoid had been touched with chloride of zinc paste. On the 8th the patient was discharged. The microscopic examination showed round and spindle-celled sarcoma. On April 20th he was readmitted owing to some more suspicious spots having appeared and some enlarged glands having made their appearance in the superior carotid triangle. The paste was applied to some growth springing from the infundibulum. On May 3rd a small packet of three or four infected glands was dissected out of the neck under chloroform. On the 6th the wound had healed.

The cavity left as the result of the operation is shown in Fig. 2. With the assistance of Messrs. Arnold and Sons I designed a silver plate, with a glass eye let into it and secured by a pair of tinted spectacles; the cosmetic effect was not bad, as may be seen from Fig. 3. On Aug. 7th the

FIG. 3.

patient presented himself for inspection, looking robust and well and showing no sign of recurrence anywhere; he had lost the cachectic tint he previously had, and had gained 5 lb., his weight then being 9 st. 6 lb. (The cuts are taken from photographs.)

Albert-terrace, Regent's-park, N.W.

HYPOCHONDRIASIS AS A SEQUELA OF INFLUENZA.

BY G. A. STEPHENS, M.D. LOND.

THE following cases may be of interest as exhibiting one of the after-effects of influenza on the nervous system.

A married man, forty-two years of age, was attacked whilst at his work in March, 1892, with severe pains in the head and shivering, and "sounds in the head" and deafness. He took to his bed and remained there owing to weakness and pains at the back of the head till June, 1892. He went for a change of air for a month to a farm, where he lived on eggs and milk principally, but, he says, got "too fat" on this diet. He returned home and went to work, but had to give it up owing to weakness, and this weakness developed to so great an extent as to prevent his moving about the house for "fear of falling down dead." He seems to have been anxious all the time to return to work, and with difficulty crawled down to see me, complaining of great weakness, especially about the legs, which he said gave way under him. A peculiar feeling about the heart troubled him, and he had constantly the feeling of a lump in the throat. I examined him thoroughly, and found his heart, lungs, abdominal organs, and limbs in good condition. I told him if

he liked to help himself, took medicine—an iron tonic—and rubbed himself well after a cold sponging he could be back at work in six weeks. I saw him about a fortnight afterwards, when he said he felt better and had been doing a little gardening; he had also been to chapel twice on the Sunday—a thing which he had been unable to do during his illness. At the end of seven weeks, during which time although getting stronger he complained of peculiar feelings, he went to look for work, which he was fortunate enough to find and has remained at it ever since. He finds Sunday the most trying day, as he has more time to think of himself.

The next case is that of a married man fifty years of age. He had been somewhat intemperate in his habits for some time previously to an attack of influenza, which occurred in April, 1892, when he had severe pains in the head, shivers, and great weakness. He had bronchitis as a complication, and was kept in bed altogether for six weeks. He felt very weak and nervous when he got up, in which state he remained for two or three months; he then improved sufficiently to enable him to try to resume work, but the feeling of weakness in the legs causing him to fall or at least to catch hold of some support for fear of falling, prevented him remaining at it any length of time. His appetite was poor all the while, which fact may be partly accounted for by his alcoholic habits. The patient remained in the above state till September, 1893, when he had a second attack of influenza which prevented his trying to work again till after Christmas, 1893, owing to the "weakness." He had tried to work once or twice after that time; but his legs always felt as though they were giving way under him, so that he gave work up altogether in March, 1894. He consulted me in April, complaining of this weakness in the legs and a peculiar feeling about the heart. His face betrayed his alcoholic indulgence somewhat, which, however, he stoutly denied, saying he only took soda-water and milk. His chest was perfectly sound and the abdominal organs were normal. His arms and legs were in very good condition, but on trying the knee-jerk or grasping the thigh muscles he started from his seat. There were no definite painful points, mere pressure anywhere on the thigh having the same effect. I gave this patient the same advice as the previous one, with an additional suggestion to discontinue using alcohol. I saw him in three weeks time, when he told me he had returned to work, the feeling of weakness being considerably diminished. He came to see me a fortnight afterwards, saying the weakness had returned and he had had to give up work. I found out that he had been drinking heavily in the meantime and had got back to his former condition.

These two patients were both in such a position that they could not afford to indulge in lazy habits, and their wives had to go out to work to support their respective families. They both expressed a great desire to get well, and especially interesting is the strong denial of the second patient with regard to his alcoholic habits, for while women invariably deny such habits men generally admit taking one or two glasses a day.

The third case is that of a married man thirty-eight years of age. The patient had influenza three years ago, and since then has suffered from great depression of spirits, at times being hardly able to attend to business. He says he had scarcely any sleep at night, and consequently felt very languid in the morning. He thinks there is something wrong with his liver. Examination shows nothing abnormal, except that he occasionally suffers from hæmorrhoids. I prescribed an iron mixture, and he feels very much better.

Whatever may be the exact explanation of influenza and its effect on the nervous system, these three cases, I think, point to its having had a good deal to do with the diminution of the power of will in these patients.

Swansea.

PRESENTATION.—On Saturday last the members of the Lancashire and Yorkshire Railway ambulance class at Bolton presented their surgeon instructor, Dr. Johnston, with a pair of bronze equestrian figures as a token of their appreciation of his services. The presentation was made by the mayor of the borough, Mr. Alderman Nicholson, J.P. This is the third railway ambulance class which Dr. Johnston has instructed at Bolton, and five of the officials at the station now hold the bronze medallion of the St. John Ambulance Association.

EMPYEMA IN CHILDHOOD.

BY ALBERT E. MORISON, M.B., C.M. EDIN., F.R.C.S. EDIN., M.R.C.S. ENG.,
HON. VISITING MEDICAL OFFICER, HARTLEPOOLS HOSPITAL.

A PAPER by Mr. J. P. Wightman in THE LANCET of May 5th, 1894; a letter by Dr. Octavius Sturges in the following number; and a paper by Mr. F. E. Batten in THE LANCET of June 2nd, on Empyema in Childhood, have much interested me. Dr. Octavius Sturges' letter is written for the express purpose of pointing out that incision and drainage alone are insufficient in the treatment of empyema in childhood, and that, though he thought they were so once, he now knows better. Mr. Wightman says: "Incision and drainage are, in the majority of cases, quite sufficient." Dr. Sturges asks, "Is that really so?" Mr. Batten's paper is written with the object of supporting Dr. Sturges' belief, and he makes out, by comparing his statistics with those of Mr. Wightman, an apparently strong case in favour of resection of a rib. My present communication is to support Mr. Wightman's statement that incision and drainage are, in the majority of cases, quite sufficient, which opinion my results more than justify. Before this question can be regarded as fairly settled further facts are required. The following ought to be known: 1. The percentage mortality of empyema in childhood treated by incision and drainage (1) without and (2) with excision of a portion of rib. 2. The average time of healing in each case. 3. The after-results as to deformity, condition of chest, &c., which must be noted and compared. 4. The method of wound treatment which was adopted. This, I think, is the most important question of all, and explains the differences in result.

I wrote a paper in 1893 on Thirty Consecutive Cases of Empyema.[1] Of these, 26 occurred in children, and since then I am able to add 8 more. In all I have operated on 34 cases in childhood, of which 32 have recovered and 2 died. These cases were all operated on and treated in private, and occurred in the course of a general practice, so that nothing special in their surroundings can be credited with the result. I append notes of the 2 fatal cases, from which it will be seen that in neither case was the operation the cause of death.

CASE 1.—A child aged two and three-quarter years, suffering for three weeks from broncho-pneumonia. The case was diagnosed as empyema, and I saw the child on Nov. 5th, 1891. The pus reached as high as the spine of the scapula on the left side. All over the right side were heard bronchitic râles, and the child was suffering from great dyspnœa. On Nov. 6th I opened the left chest, giving exit to about a pint of pus. The breathing was relieved, but the bronchitis increased, and the patient died on the third day after operation from this complication.

CASE 2.—A child aged ten months. She had been ailing for some months with rickets. Three months ago she had had an attack of "bronchitis," and had never rallied since. When I first saw the child she was extremely emaciated, with high temperature, night sweats, and harsh, dry cough. Pus in the right pleural cavity was diagnosed. The chest was opened, and everything went well for a week, when the child suddenly had a fit and died.

Table showing the number of Cases and the Result for each year of age.

Age.	Number.	Recovered.	Died.
Under 1 year	4	3	1
Between 1 and 2 years	2	2	0
,, 2 ,, 3 ,, ...	5	4	1
,, 3 ,, 4 ,, ...	4	4	0
,, 4 ,, 5 ,, ...	8	8	0
,, 5 ,, 6 ,, ...	2	2	0
,, 6 ,, 7 ,, ...	5	5	0
,, 7 ,, 8 ,, ...	0	0	0
,, 8 ,, 9 ,, ...	2	2	0
,, 9 ,, 10 ,, ...	2	2	0
Total	34	32	2

The percentage mortality of my cases is 5·8. The average duration of treatment from the date of incision to the completion of healing was thirty-two days. I have measured and examined the chests of most of them months after operation,

[1] Northumberland and Durham Medical Journal, April, 1893.

and, except for the scar, it is impossible to say which side has been affected. For full details I would refer to the paper above mentioned and will now only state my conclusions, which are: (1) that pleuro-pneumonia is the most frequent cause of empyema; (2) that empyema rarely follows pleurisy with effusion; (3) that in adults empyema is more likely than in children to be secondary to serious lung disease; (4) that the diagnosis of empyema is not always easy, for it may be ushered in by symptoms pointing more to the abdominal than the thoracic cavity, and the physical signs resemble closely those of consolidation; (5) that the exploring needle should be used in every doubtful case and, if needful, in more than one place; (6) that there is no danger from using the needle with proper care; (7) that the immediate prognosis of an uncomplicated empyema treated by incision and drainage is good—it is worst when allowed to burst through the chest wall; (8) that the remote prognosis is excellent; no deformity follows recovery and no sequelæ are to be anticipated; (9) that the best prognosis can only be given in cases where an aseptic condition of the pleural cavity can be assured by antiseptic operation and antiseptic after-treatment; (10) that the anæsthetic should be carefully administered and the patient not turned over during its administration; (11) that in adults it may be safer to perform the operation without general anæsthesia; (12) that aspiration is disappointing as a curative agent but useful in some cases temporarily; (13) that incision and drainage with antiseptic precautions may be trusted to cure all cases of curable empyema; (14) that irrigation is unnecessary and dangerous; and (15) that rib resection is needful in some neglected cases, but not in the generality.

Hartlepool.

TREATMENT OF SMALL-POX BY EXCLUSION OF THE CHEMICAL RAYS OF DAYLIGHT;

AS PRACTISED BY PROFESSOR C. FEILBERG OF COPENHAGEN, SUPERINTENDENT OF OERESUND HOSPITAL.

BY JOHN MOIR, L.R.C.P. & S. EDIN.

I AM indebted to Mr. J. S. Thornton, B.A., the secretary of the English Sloyd Association, for the translation of Professor Feilberg's pamphlet, published in Copenhagen within the last few weeks, as reprinted from the *Danish Hospital Times*, No. 27, 1894. I do not, however, propose here to give the whole of Professor Feilberg's paper, but simply the sum and substance of it, with a note at the end as to my own impressions of it, as having personally treated considerably over 3000 cases of small-pox. Professor Feilberg states that in the slight epidemic of small-pox in Copenhagen in January and February of this year (1894), he took occasion to investigate the method of treatment of the sick sketched out by Dr. Finsen,[1] by the exclusion of the chemical rays. This method had been already tested by Dr. Svendsen[2] of Bergen, Norway, with extraordinarily good results,[3] and in Paris, also, by Dr. Juhel-Renoy, whose results were not so good, but such, however, that he recommends the method.[4] Professor Feilberg's own fourteen cases in Copenhagen were treated in the same way. Herr Finsen shows this treatment to be founded on the train of ideas *(paa den Lanhegang)*, that when the chemical (blue, violet) rays can bring out the inflammation on the skin in health, still more can they produce an unhealthy work on the skin in disease. In special degree may they take this action with variola, because the most numerous and deepest scars are usually found on the face and hands. He sets up as a condition favourable for successful results the exclusion of the chemical rays of daylight. This was effected in Professor Feilberg's, Herr Finsen's, and the other cases, by the disposing of three layers of red and one layer of yellow glazed shirting, known as "bookbinder's," for every window. Gas-jets were furnished with darkened glass of the sort used by photographers. So that there should not come any daylight into the doors where there were panes in the panels they were also covered with red cloth, and the doors themselves provided with hanging curtains to exclude the light. On the visiting round, and when the patients are fed, candle-light—*Stearinlys*—is used. When the patients were well enough to be moved to other rooms red window panes were used, which, of course, gave more light; but when that under the spectroscope was seen to be, as in sunshine, strong, so that heavy green rays passed through, then, in addition, dark red cotton cloth was hung inside the window panes, making the room darker.

This is substantially the treatment; and of Professor Feilberg's cases nine were submitted to it on the first appearance of the eruption, and five later. He holds that the nine made greater improvement than the five who did not come under his care early enough to receive the full benefit of the treatment, the average duration of the exclusion of the daylight and the substitution of the red light being eight days. There was nothing special about the fourteen cases, or any of them—they were fairly severe, nothing more.

This appears to me to be a strange and curious revival of mediævalism discarded in this country since the days of Sydenham. I have always found air, light (the brighter the better, the patient's eyes being shaded when necessary, and buff blinds to exclude strong, but more particularly very hot, sunshine only), cool temperature, cooling drinks, non-alcoholic, with soft nourishing food and an occasional aperient, to be the best method of treating confluent small-pox, with gentle open-air exercise and warm baths, at the very earliest possible moment, whether that may happen to be three days or three weeks. These are in my case the greatest incentives to recovery, combined of course with successful vaccination or, better still, with really genuine successful revaccination. Professor Feilberg says nothing in his fourteen cases about treatment, save mentioning Dover's powder in one case, temperature of chamber (though he gives patients' temperatures), use or non-use of alcohol, character of vaccination or, stranger still, state of weather, as to amount of sunlight and daylight in Copenhagen in January and February of this year, 1894 (the dead of winter), when he treated his fourteen cases. Certainly *all* the daylight there could have been then would hardly have harmed his by no means exceptional cases. "Recent experiments in Italy have shown that sunbeams are able to destroy bacteria in water at a depth of at least twenty inches beneath the surface, and this is greatest when both perpendicular and oblique rays enter the water uninterrupted, raking the enemy with a cross fire as it were." No exclusion of daylight then for me. "Light, light; more light."

Victoria Docks, E.

[1] Danish Hospital Times, Nov. 1st, 1893.
[2] Medicinsk Revue, October, 1893.
[3] Danish Hospital Times, Hospitalstidende, Nov. 1st, 1893.
[4] Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, Dec. 14th, 1893.

TEA AS A POSSIBLE SOURCE OF PLUMBISM.[1]

BY J. P. WILLIAMS-FREEMAN, M.D., L.S.Sc. DURH., M.R.C.S. ENG.

CASES of lead poisoning are by no means rare, and it is not unlikely that one misses many cases in general practice, even of those that one sees. I have more than once been called to see a man with plumbism, and have on investigation elicited a history of colic and found a lead line on the gum of the wife. The common sources of lead poisoning are well known and are, as a rule, easily excluded. By far the commonest source in this district is home-made wine, which stands for some days in the making in earthen pans, the glaze of which contains lead—a source familiar to the Salisbury Branch of the British Medical Association, in which it has been more than once discussed. But there remains a certain number of cases which are less easily explained. In those which occur in more or less isolated cottages the conditions of life are so simple that there ought to be no difficulty in tracing the cause. In fifteen such cases which I carefully investigated I found that in six only was home-made wine the obvious and likely cause. In five the tea contained lead, and I could find no other possible source of plumbism. In two wine was a possible cause, but tea (which contained lead) was the more probable. In two I could find no cause, but I was unable to exclude the tea drunk before the illness. Five

[1] Abstract of a paper read before the Salisbury Branch of the British Medical Association, April, 1894.

of the six wine cases and two of the five tea cases occurred in the autumn. Cases of lead poisoning traced to tea packed in lead occurred at Odessa in 1886, and the safety of so packing it has often been called in question. It is acknowledged by the trade that many teas contain a trace of lead. The tea may apparently get its lead in several different ways. It may no doubt mechanically rub off lead from the lining of the chest, or still more (from the larger proportion of surface exposed) from the lead paper of the small packets. It would be interesting to make comparative analyses of the tea from the corners and sides of the chests and from the middle. The lead lining of the chest is sometimes acted upon either by the tea fermenting inside it or from the chest being made of green wood. The salt produced is basic lead carbonate, an impalpable powder which would readily diffuse itself through the tea. A slow action by which the lead becomes brittle and "perished" goes on in shops and places where the cases are kept for a long time—possibly tea kept long in such coverings might be contaminated in this way. Traces of copper, chips of lead paper, and in one case a piece of brass, found by the analyst in several small packets of tea, would seem to point to great carelessness in packing either in England or abroad. Mr. Angell of Southampton, the county analyst for Hants, to whom I have submitted most of the teas I have had examined, finds by experiment that tea infusion has a powerful solvent action on lead, so that the chips of lead paper would be a source of danger in the teapot. The samples examined were nearly all packet teas of the common sorts. They were packed in ordinary paper, in lead-paper, and in lead paper lined with white paper. Mr. Angell has kindly given me the results of some analyses he made on his own account, so that altogether twenty-two different kinds of tea have been examined, of which seventeen contained traces of lead. The quantity of lead found was in most cases extremely small—of sixteen samples of eleven different brands of tea the lowest quantity found was 1·375 milligrammes per pound, the highest was 18 mgr. per pound, and the average of all 5·962 mgr. per pound. The lead was most unevenly distributed; of two packets of the same brand bought at the same time at the same shop one contained 1·6 mgr. per pound and the other 18 mgr. How far one would expect these small quantities of lead to prove dangerous it is difficult to judge. Data as to quantities which have proved poisonous are few and refer almost exclusively to water. Oliver refers in his Goulstonian Lectures to a case of his where only $\frac{1}{5}\frac{1}{7}$ gr. per gallon was found. Parkes quotes cases of lead poisoning due to water containing only $\frac{1}{1}\frac{1}{0}$ gr. per gallon, and sums up by saying that water with $\frac{1}{2}\frac{1}{0}$ gr. per gallon should be considered dangerous and that some persons may be affected by less. It is of course impossible, either in water or in tea, to say that a found quantity is in any degree constant; still greater uncertainty is introduced by the fact that persons differ very widely in the amount of water that they drink. The quantity of tea is perhaps not quite so variable; a quarter of a pound a week seems a fair average. If one assumes two pints of water to be the average quantity drank per diem one can make a sort of comparison which may be given for what it is worth. Tea containing 6 mgr. of lead per pound (the average of all the estimations) would be then about equivalent to water containing $\frac{1}{7}$ gr. per gallon; while the tea which had most lead (18 mgr. per lb.) would be equal to water containing $\frac{1}{2}\frac{1}{5}$ gr. per gallons. Possibly these quantities may be peculiar to the year owing to some temporary cause; but, assuming that they are not exceptional, though far too small to cause a widespread epidemic, such tea would probably cause plumbism in a few susceptible individuals and would certainly add to the danger of their being affected from other sources, such as water or home-made wine. Moreover, may not some of the many cases where tea is suspected of causing vague dyspeptic and colicky symptoms be in reality minor cases of lead poisoning? The tea trade is in the hands of the Customs authorities; are they justified in passing tea which contains any lead whatever?

Weyhill, Andover.

PHOTOGRAPHIC CLUB.—As a large number of the medical profession are interested in photo-micrography, we are asked to state that Mr. Andrew Pringle, F.R.M.S., will read a paper on this subject at the Photographic Club, Anderton's Hotel, Fleet-street, on Wednesday, Oct. 3rd. Free tickets of admission may be obtained by sending stamped envelope to the honorary secretary, Mr. James A. Sinclair, 26, Charing-cross-road, W.C.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

"BONNET-PIN IN THE MALE URETHRA."

BY J. J. STACK, L.R.C.P. EDIN., L.R.C.S. IREL.

A FEW years ago, a man, aged about forty-five years, called on me and asked me to remove a pin from his urethra. He said that he passed the beaded head of a bonnet-pin into his "pipe" "to relieve himself from the gravel." He was in a fearful state of mind over the accident, as he was afraid that the pin had slipped into his bladder. On examination I found the beaded end by pressing my fingers well up behind the scrotum, where I could use pressure enough to propel the foreign body forwards. I got an ordinary No. 8 catheter, and cut off the top with the scissors. This I passed into the urethra, with the object, if possible, of ensheathing the point of the pin. My idea, however, failed, and after several trials I was obliged to give it up. I then pressed the beaded end forwards as well as I could, guiding the point with a small forceps, until I got the point within a short distance of the meatus. I next forced the point through the tissues and got the body of the pin exposed. This I pulled on until the head came to the spot where the point was. By pressing the body of the pin downwards and backwards—the bead was in the meatus—and with very little manipulation, I was enabled to thus extract it. This is, so far, exactly like Dr. J. H. Simpson's case, but the presence in the urethra was less mysteriously accounted for. There was a little soreness in the penis for a day or so, with a slight discharge, but beyond this the case progressed favourably. Dr. Simpson's case and mine are very curious coincidences, and one description would nearly suit the two cases.

New Cross-road, S.E.

CURIOUS DEFORMITY OF THE CHEST WALL.

BY S. FLOYD, M.B., L.R.C.P. LOND., M.R.C.S. ENG.

THE following deformity of the chest may be of sufficient rarity to be worth recording. A boy aged thirteen was admitted to the hospital ships, Long Reach, suffering from a mild attack of small-pox. On physical examination the second, third, and fourth ribs and costal cartilages on the right side of the chest were found to be deficient, so that the space wanting in the chest wall measured three and a half inches vertically and two and a half inches horizontally. At the fourth space the right side of the thorax measured twelve and a half inches in circumference, and the left fourteen inches. The unprotected space was markedly depressed on deep inspiration, but the ordinary physical signs elicited upon examination of the thorax were normal, though a little pronounced. The pectoralis major and minor were absent on the right side, with the exception of the clavicular head of the former, which was more developed than on the opposite side. The rest of the pectoralis major was represented by a fibrous band. The right deltoid muscle was hypertrophied, but the boy had almost as much power with the right as with the left arm. In every other respect the chest was quite normal. The costal ends of the third and fourth cartilages could be felt to be joined together, but the other deficient ribs and cartilages terminated separately. The deformity is congenital, and no other member of the family is affected in any way.

Hospital Ships, Long Reach, near Dartford.

A CASE OF HÆMOPHILIA.

BY JAS. WM. WHITE, M.B., C.M. GLASG.

THE patient, a boy aged five years, has since birth been an object of interest and anxiety to his friends. The most moderate blow, and at times even a hand pressure, have sufficed to cause ecchymoses which are slow to disappear. The limbs, therefore, have almost normally a mottled appear-

ance. The articular phase is marked, the knee-joints having several times suddenly filled with blood after trifling injuries. Nevertheless the patient is ruddy, full of life, and enjoys perfect health. Under such circumstances he lately had the two left lower (temporary) molars removed for caries, the operation being performed under nitrous oxide gas. There remained after extraction a slight laceration on the inner aspect of the anterior socket. At the time of operation hæmorrhage was trifling, and the boy returned home well. After a few hours, however, blood began to well from both sockets, and the flow was with the greatest difficulty arrested by graduated compresses. Several times within the next three days hæmorrhage recurred, and the same trouble of arresting it was encountered. Local styptics were of no assistance to local pressure, but ergot seemed to act somewhat beneficially. Matters now appearing to be well, the patient was put to bed; but from the laceration before mentioned blood streamed, and the pillow was soon quite saturated. The hæmorrhage only ceased when fainting occurred, and even afterwards, whenever pressure was relaxed for a brief interval, blood flowed freely. This state of affairs lasted for five or six days, the outbursts being gradually more controllable, and finally bleeding ceased. The gum was atrophied and flattened by the pressure. The case demonstrates the risk of extraction under such circumstances, for in the present instance the fangs were short, being in part absorbed, and bleeding under normal circumstances should have been slight. Hereditary transmission followed the ordinary course.

Regent-park-square, Glasgow.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, WATERLOO-ROAD, S.E.

TUMOUR OF THE VENTER OF THE SCAPULA INFILTRATING THE SUBSCAPULARIS MUSCLE IN A BOY AGED TEN; GROWTH OF THE TUMOUR INTO THE THORACIC PARIETES; ATTEMPTED REMOVAL; PNEUMOTHORAX; DEATH; NECROPSY; REMARKS.

(Under the care of Mr. A. MARMADUKE SHEILD.)

THE operative treatment of growths of, or in, the region of, the scapula, of a sarcomatous character, is not very promising, even when the whole of the tumour has apparently been successfully removed. There is a great tendency in such growths to spread into parts around, and so the success of the operation is too frequently more apparent than real. Operation should be performed early. This case presents many interesting features, its position and extent rendering exact diagnosis before removal quite impossible. For the notes of this case we are indebted to Mr. Huntly, house surgeon.

The patient, a boy aged ten, was sent to Mr. Sheild by Mr. Muirhead Little, having been taken to the Orthopædic Hospital on account of atrophy of the muscles about the right shoulder and marked weakness and wasting of the upper extremity. In the axilla there was a hard, rounded, fixed mass the size of an orange, which pushed up the shoulder and obviously compressed the axillary nerves. It was exceedingly difficult to make out whether or not the tumour moved with the scapula, but it appeared to do so slightly. The skin over the tumour was not adherent and was not inflamed. There was no tenderness except on firm manipulation. The measurements of the tumour, taken with the arm abducted as far as it would go, were—(1) from above downwards, two inches and a half, and (2) from before backwards, 2 inches. Looked at from the front there appeared to be marked wasting of the pectoral muscles on the right, there being quite a depression in the subclavicular region as compared with the other side. The deltoid also was much wasted, the head of the right humerus and acromion being much more prominent. The shoulder was kept from three-quarters of an inch to one inch higher on the right side than on the left, and, as noticed by the mother, the boy seemed to keep his head a little bent towards the right shoulder. The lower part of the anterior margin of the trapezius, where it was forming the posterior border of the posterior triangle of the neck, stood out more prominently on this side also. With the arms held to the side the tumour was only slightly visible, but when the right arm was abducted it was very evident. From behind, the right supra- and infra-spinatus muscles were considerably atrophied, and the tumour was perfectly evident with the arm hanging by the side, forming quite a bulge along the axillary border of the scapula. There was well-marked lateral curvature of the spine in the dorsal region, with the convexity towards the left side, so that the left inferior angle of the scapula stood out prominently. On passing a tape underneath the axillæ and taking the measure of the circumference of the shoulders separately, it was found that on the right side it was about 11¾ in. and on the left side 10½ in., the tape passing over the clavicles just internally to the acromion on each side. The right arm, as might be expected, was more wasted than the left, the circumference of the former over the fleshy part of the biceps (six inches from the tip of the acromion) being 5½ in., whereas on the left side it was 6¼ in. The circumference of the forearm one inch below the internal condyle on the right side was 6 in. and on the left side 6¾ in.

Movements of the right shoulder-joint.—On the right side, when asked to abduct his arm (holding the body fixed), it was found that it was only possible to do this to a distance of half a right angle. It was impossible for him to raise his arm higher without causing pain. He could swing his arms backwards and forwards about equally. Rotation was much affected on the right side, more especially external rotation, which was very limited. Internal rotation was better, but not so good as on the left side. Circumduction was impossible. He was able to place his right hand round over the left shoulder almost as far as he could place the left arm over the right shoulder. There was no pain experienced in making any of these movements. Those at the right elbow and the wrist were as good as on the left side. Sensation was everywhere unimpaired.

Family history.—The father is living and healthy. The mother is also a fairly healthy woman. There were seven children in the family, three of them are living. Of the four who are dead one died from tumour on the brain, one from "water on the brain," one was born dead, and in one death was indefinite, but it was not a full-term child; it only lived for one week. There was no history of tubercle to be obtained in any branch of the family.

History of the disease.—About twelve or fifteen months ago the patient was taken to the Royal Free Hospital by his mother, who thought that he had put his right shoulder out. On being asked why she thought so, she said because a small lump was forming in his right armpit. She also said that she was told that the patient was suffering from curvature of the spine and was treated for this. She likewise noticed that the patient always kept his head flexed towards the right shoulder, and held the latter raised towards the head. Up to four or five months previously the patient had fairly good movements about his right shoulder-joint, but thought that he had had a greater tendency to use the left arm than the right since the lump in the armpit had been getting larger. There is no marked history of pain. For the last four or five months the patient had been noticed to keep the right elbow flexed. When not in this position the elbow was extended and the whole arm was held in such a position that the palm of the hand was turned outwards. The patient had been noticed to be often rubbing the arm with his left hand in the region of the elbow-joint, but whether from pain or a feeling of coldness was not quite clear. There had never been starting pains in the arm, nor had it ever been noticed to be blue or swollen. He was said to always join in games with the other boys at school, but he used the left arm whenever he had the opportunity.

The parents of the boy, having had the grave and difficult nature of the case explained to them, wished an operation to be performed, and this was accordingly undertaken on Aug. 13th. The A.C.E. mixture was administered, and proceedings were commenced by making an incision into the axilla, to try more accurately to define the limits of the tumour. It was now quite evident that the tumour was of scapular origin, but the finger could not pass between the

growth and the thoracic parietes, towards the axillary apex. On moving the arm and scapula, the mass of the tumour moved slightly too, and the opinion was formed, erroneously as it proved, that if the scapula was removed the tumour would come away with it, leaving the thoracic parietes intact. Accordingly two very free incisions were made posteriorly, one from the superior angle of the scapula to the inferior, the other crossing this at almost right angles. The muscles at the vertebral border were divided, next those along the superior border and angle, the acromion was divided, and the shoulder-joint freely opened; all spurting vessels were secured by pressure forceps, and the amount of blood lost was quite inconsiderable. The axillary border was next attacked, and as the bone could now be separated from the chest it became evident that the subscapularis and teres muscles no longer existed as such, but were incorporated in the tumour mass, the growth, firm and fibrous, entirely infiltrating their substance. It was also ascertained that the tumour projected markedly towards the thorax on the upper aspect of the inner axillary wall, and that the intercostals and serratus magnus were implicated in its growth. Seeing the hopeless nature of the case if abandoned, an attempt was made to peel away the intercostals and pleura from the surface of the tumour with a blunt separator, but this was quite impossible, and in attempting it the thoracic cavity was opened, and the finger passed therein could plainly feel the upper lobes of the growth projecting against the ribs and lung, though of course covered by the firmly adherent pleura. Under these desperate circumstances the parts were readjusted and dressed antiseptically. An obvious pneumothorax existed, and the heart became displaced, but there were no marked signs of shock. The boy died on the following day.

Necropsy.—Only the scapula and tumour were removed post mortem, and an examination of them revealed the following conditions. The right lung had of course completely collapsed; the pleura was non-adherent to it. The thoracic walls and the first and second ribs were firmly incorporated with the tumour. The growth appeared to have originated in the subscapularis muscle, and though it apparently sprang from the scapula this was not really the case. The whole subscapular muscle was practically a sarcoma, and the growth had in like manner invaded the teres and serratus magnus as well as the intercostal muscles. At the upper limit of the tumour the main vessels and nerves passed through its substance and were incorporated with it. The thorax was opened in the third intercostal space. Mr. Targett, at the Royal College of Surgeons of England, further examined the growth and found the bone full of it. In microscopical structure it was a dense spindle-celled sarcoma, approaching to fibroma in some parts.

Remarks by Mr. MARMADUKE SHEILD.—The extreme hardness of this tumour before removal led me to the hope that it was of an osseous or cartilaginous nature, and this opinion was strengthened by the vagueness of the history, it being quite possible that the tumour had been of very slow growth. As against this view was the origin of the tumour from the venter of the scapula, and the marked nerve implication, which latter, as remarked by Mr. Jacobson, who was good enough to see the case with me, pointed to sarcoma. The exact relations of the tumour, owing to the confined limits of the axillary space, were very difficult to ascertain, and its serious encroachment on the thoracic parietes was not discovered until the bone, being in great part detached, was lifted upwards and backwards, when it became evident that removal was hopeless. This case forcibly illustrates the difficulty of dealing with tumours of the thoracic parietes, and the uncertainty of their exact deep connexions. This difficulty is enhanced when the growth originates high up in the axilla, where fixation may readily be explained by pressure and fascial confinement. The fact of the tumour having really originated in the subscapularis muscle, and afterwards become adherent to the scapula, could hardly have been ascertained prior to removal, and the attachment of the growth in the glenoid region was so firm that it could scarcely be separated by dissection. Probably any malignant growth invading the chest wall is unfit for operation, and the fixation of this tumour, if rightly interpreted, would have led to refusal to operate. There are two specimens of tumours of the venter of the scapula, removed by Sir William MacCormac and Mr. Golding-Bird, in the Museum of the Royal College of Surgeons of England; in both of these the tumour seems to have moved upon the walls of the thorax and to have been free from it. Early operation is imperatively called for in tumours of this situation, and should the brachial vessels and nerves be incorporated with the mass removal of the scapula with the whole upper extremity is the only feasible proceeding. The case with which bleeding was controlled in this case by free incisions, and application of pressure forceps, was very striking, and it is hoped that the perusal of this case will be useful to any surgeon who may in the future have to deal with tumours the venter of the scapula.

BUCKINGHAMSHIRE GENERAL INFIRMARY, AYLESBURY.

RENAL CALCULUS; LUMBAR NEPHROLITHOTOMY; PYÆMIA; NEPHRECTOMY SIX MONTHS AFTERWARDS; RECOVERY.

(Under the care of Mr. WALTER DENDY and Mr. W. EAGLES.)

THIS is an interesting account of a case in which the removal of a mulberry calculus from the kidney relieved the painful symptoms which its presence had caused. The patient did not, however, submit himself to operation until the kidney had become so disorganised that its removal was necessary four months later. During this interval of time abscesses in and about the kidney occurred, and the man had an attack of pyæmia. The occurrence of pyæmia after any operation is at the present day a rarity, but it is still after operations involving the genito-urinary tract that it is most commonly met with, the difficulty in rendering such wounds aseptic, and keeping them so, being very great and sometimes insuperable. The amount of shock caused by removal of a kidney is sometimes very considerable, and there was no exception in this case. This shock was so severe that intravenous injection of saline solution was required.

A tall, strongly built man, but pale, thin, and worn, thirty-eight years of age, was admitted into the Buckingham General Infirmary on July 26th, 1893, for fixed pain in the left loin and hæmaturia. The pain had existed for the last nine months, was intermittent, aggravated by exertion, often came on at night, and was accompanied by nausea or vomiting and more or less complete anuria. It was followed by a free flow of urine, once by blood-red urine on the night of July 21st after a paroxysm of severe renal colic. He was discharged on Aug. 2nd, 1893, having been kept in bed all the time, and during this period his symptoms were in abeyance. He was told to return on the first recurrence of pain.

The patient was readmitted on Aug. 7th, 1893, suffering from a severe attack of renal colic, which had come on after an evening walk. He continued in pain more or less, with vomiting, and passing only eight ounces of urine, normal in all respects till Aug. 9th, when the pain abated and he passed twenty-one ounces of dark, turbid, porter-coloured urine, which under the microscope showed blood and blood pigment, but no crystalline elements. A few blood casts were seen. On Aug. 10th lumbar nephrolithotomy was performed under chloroform. A rough mulberry calculus was removed in two pieces from the sinus, where it was tightly dovetailed into the calyces. No needling was done, the stone being removed through a rent made in the greatly dilated pelvis, from which a pint of blood-red urine escaped. The subsequent course was characterised by a pyæmic condition, the evidence of which was the temperature curve, together with articular pains in the right shoulder and hip. On Sept. 12th he had a severe rigor, lasting fifteen minutes; at 6.15 P.M. the temperature reached 107° F.; wet packing was employed, and ten grains of antipyrin were given. At 7.35 P.M. the temperature was 100°; a drenching sweat followed. On Sept. 25th the wound was opened up by breaking down the granulation material by the finger. No abscess cavity was found, but a large hydronephrotic cyst, with thin septa separating it from smaller cysts, was opened, discharging a quantity of bloody urine. No fetor was present. A piece of kidney tissue adherent to the posterior wall of the incision was removed, and found to be in a condition of interstitial nuclear proliferation with granular epithelium. The patient became badly collapsed, and was got back to bed speedily. He had rallied well the next day. The temperature still ran an unfavourable course, always raised at night and falling next morning after sweats. The countenance was sallow. On Sept. 29th a swelling appeared at the outer and upper part of the left forearm over the extensor group. On Oct. 3rd fluctuation appeared in the

swelling, which was opened under an anæsthetic next day, about one ounce of pus without fetor being discharged. From this point the patient steadily improved, gaining strength and flesh, the temperature only going above normal four times, and never above 99° until Nov. 22nd, when the evening temperature was 100·4°. On Nov. 23rd the morning temperature was 99° and the evening temperature 102·6°. This temperature was considered to be due to influenza, several other patients having a similar rise. From Dec. 5th to the 10th the temperature ranged between 98° and 104·2°. In the evening of the 7th, the temperature being 104·2°, tepid sponging was employed. After the 10th the temperature became subnormal, and nothing fresh happened until Dec. 16th (morning temperature 96°, evening temperature 97°), when an abscess apparently at the lower part of the wound burst, discharging externally. This seemed to be due to perinephric suppuration. From this date the temperature was again subnormal, rising to 100° in the evening on Jan. 5th, 1894.

On Jan. 9th, 1894 (morning temperature 98°, evening temperature 97°), nephrectomy was performed through the former wound; this was opened up, and more room given by a vertical incision from the top of the twelfth rib downwards over the iliac crest. The kidney was enlarged, pale, and cystic, and weighed nearly eight ounces. A good deal of collapse supervened, which was overcome by the house surgeon, Mr. C. B. Dale, who injected normal saline solution into the median cephalic vein. The ureter was separately tied.

Reviews and Notices of Books.

Les Réactions Leucocytaires vis-à-vis de certaines Toxines Végétales et Animales. Par le Docteur GASTON CHATENAY de la Faculté de Paris. Paris: Société d'Éditions Scientifiques. 1894.

DR. CHATENAY in a short monograph discusses the question of the action of toxic products upon leucocytes. These toxic products he divides into three groups: (1) those of the higher phanerogam (vegetable origin), of which he takes as types abrin and ricin; (2) those of bacterial origin, the poisons of diphtheria and tetanus; and (3) those of animal origin, of which he takes as a type the poison of the cobra di capello. He starts from the point that the question to be solved is as follows: Is there a difference in the leucocyte reaction between a "vaccinated" animal and a normal control animal when injected with a lethal dose of a poison, and, if this difference exists, can the different results (death of the control animal and survival of the vaccinated animal) be attributed to such difference? In addition to this a subsidiary question, Is there during a period of vaccination any leucocyte reaction which would demonstrate that the organism is undergoing such changes that it may be said to be preparing itself to withstand the action of a lethal dose of the poison—i.e., in a case of pure intoxication?—must also be answered. After discussing the theory of phagocytosis in general, its history, and the results that have been obtained by following the clue it presents, the author gives a series of experiments as a result of which he arrives at the following conclusions: that the diverse toxic substances above enumerated present many typical analogies, but also well-marked differences; and that they produce various and often opposite disturbances, yet the reaction as regards abrin, ricin, and the diphtheria and tetanus toxines show a marked analogy and simultaneity of phenomena. In the case of all, with the exception of abrin, in which the latent period is somewhat longer, the first leucocytic manifestation is produced approximately at the same hour in both vaccinated and control animals. As regards the further analogies in various intoxications there is (1) in the animal in course of vaccination a hyper-leucocytosis, progressive and regular in character, and varying according to the dose of the poison administered; (2) in the vaccinated animal hyper-leucocytosis always occurs, but is feebly marked when a lethal dose is exhibited, the greater the dose the more feeble the reaction; and (3) in a control animal receiving a lethal dose there may be a feeble hyper-leucocytosis if the dose be merely sufficient to kill the animal, but this is rapidly followed by a hypo-leucocytosis more or less marked, but before death there is usually a return to the hyper-leucocytic condition. When a lethal dose 10 or 100 times the minimum dose is administered there is first and always a hypo-leucocytosis which never gives way to hyper-leucocytosis except when life is prolonged beyond twenty hours. The author finds, however, that rapid oscillations between the two conditions, which vary according to the strength and number of the doses, are always present. He concludes as a result of his observations, and comparing them with the conclusions of Metchnikoff, Sanarelli, and Bordet, that leucocytes play an important *rôle* in intoxications; that progressive and regular hyper-leucocytosis is a favourable prognostic feature; that progressive hypo-leucocytosis is an unfavourable feature; and that oscillations more or less marked in hyper-leucocytosis and hypo-leucocytosis are indications of a certain but possibly slower fatal termination.

The English Riviera; a Guide to Sidmouth: with Remarks on its History, Climate, Amusements, &c. By NEIL MACVEAN, M.A., and LEONARD WILLIAMS, M.B., C.M., F.R.Met.S. Sidmouth: Day Brothers. 1894.

THIS is a good little book in its way about a charming little watering place on the South Devon coast. Its title was derived from the epigrammatic and possibly impulsive description of the place by a visitor who was surprised and delighted with the climatic conditions he found there; but the authors explain that they do not put forth a claim to have the climate of Sidmouth considered in the same category as some of the health resorts on the Mediterranean sea-board. At the same time, Sidmouth has climatic and other claims of its own which are too little known and appreciated. It is picturesque with its sea-front colouring of red marl hills, crowned with green, and abounds in charming walks and drives in immediate proximity to the sea, and presents in point of climate and various other conditions advantages as a playground in summer and a health resort in winter which are superior to many places better known and more frequented. It has to be borne in mind that foreign stations, if they possess advantages for the invalid in regard to temperature, sunshine, rainfall, and humidity, are foreign stations nevertheless, and hence are not available for a good many people, and they are also sometimes either unsuitable or unnecessary for cases which would do, all things considered, as well, if not better, at home in an English winter resort. In this respect Sidmouth offers many advantages, as several shrewd medical men and patients have found out for themselves. This little book is what it pretends to be—a guide to Sidmouth. The historical part is mere compilation; the information, however, about the place, from a medical point of view, is sensible and pertinent. But the best course for those of our readers who are able to spare the necessary time is to visit Sidmouth and judge for themselves, supplementing their personal observations by the information which this guide supplies. Devon, as everybody knows, is a beautiful county, and Sidmouth, with its houses exposed to the sea and protected from cold winds by the hills, and with its wooded country, orchards, and gardens, and hedges of fuchsias and myrtle and pleasant walks, is not the least genial and pleasant part of it.

LIBRARY TABLE.

Spinal Caries. By NOBLE SMITH, F.R.C.S. Edin. London: Smith, Elder, and Co. 1894.—This monograph records in a practical manner the result of the author's experiences in dealing with these cases; though on certain points cases of other surgeons are also alluded to. A special feature in the work is the accuracy and care with which the illustrations have been produced, by means of which different forms

of spinal caries and the etiology of the disease are well demonstrated. The author's directions regarding the treatment of inflammatory disease of the spinal column are given with much clearness, and the various complicated metal splints which afford the means for mechanical fixation of the trunk are well described.

Disease and Race. By "JADROO." London: Swan Sonnenschein and Co. 1894.—Have gonorrhœa and leprosy produced in the course of ages a hybrid disease known as syphilis? Is lepra a hybrid between Jewish leprosy and a new disease hailing from Asia Minor? These are two of the problems which "Jadroo" has set himself to solve for the benefit of the race, not, indeed, with brevity, but with an ingenuity and a diligence worthy of all success. There are other interesting questions mooted in the book, but the whole work depends for its value on a mass of probabilities and hypotheses containing a small quantity of bread to an intolerable deal of sack.

Diet and Cookery for Common Ailments. By A FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS and PHYLLIS BROWNE. London, Paris, and Melbourne: Cassell and Co. 1894.—"Drugs have their place, but diet in all cases takes precedence," may be taken as one of the golden rules of medicine. It forms the key-note of this work, which has for its object the statement of the food problem, not in calorics and gases, but in the form of actual dishes which will prove both digestible and palatable. The first two or three chapters deal with the physiology of digestion and the relative digestibility of the varieties of food and of their behaviour during this process. The style here is somewhat didactic and wordy, and occasionally the matter of this part of the book is not quite precise. Following upon this, dietary tables for various diseases are given, preceded, in most cases, by a paragraph on their *rationale*. It is in the directions for preparing the articles of diet that the value of the book is most apparent, for how far the dietary prescribed in the tables is satisfactory must be left in particular cases to the judgment of the medical practitioner; but no one can read the excellent directions for the preparation of food without being struck with the ability of Miss Phyllis Browne as an expounder of the principles and practice of cookery.

JOURNALS.

Archives de Neurologie. Vol. XXVIII. No. 91. Septembre. Paris: Bureaux du *Progrès Médical*.—The September number of the Archives has as its *pièce de résistance* a description by Le Filliaire of a new method of graphically recording tremors, especially those of the tongue and such muscles as the orbicularis oris. The apparatus seems very simple and the examples which are given of its work are very interesting. There is a clinical paper by Toulouse on Amnesia, and the usual excellent Digest of Nervous Pathology. There is also a very full account of the Transactions of the Congress of French Alienists and Neurologists, so that it will be seen that the number is an unusually interesting and important one.

Brain: a Journal of Neurology. Autumn Number. London: Macmillan and Co. 1894.—The autumn number of *Brain* is almost entirely devoted to sensory changes and their central representation. There are two papers, one by Dr. Henry Head, dealing with Referred Pain in Diseased Conditions of the Head and Neck and Thoracic and Abdominal Viscera on lines similar to those pursued in an earlier paper, which more particularly dealt with the localisation of sensibility in regions of the cord corresponding to the limbs. The other paper is a clinical consideration, by Dr. Allen Starr, of Anæsthesia associated with Lesions of the Upper Part of the Spinal Cord as a Guide to Diagnosis. There are two reviews, one of Tucsek's "Pellagra," the other of Obersteiner's "Arbeiten."

New Inventions.

A NEW FORM OF EAR SYRINGE GUARD.

AT the suggestion of Mr. Lund of Manchester, Emeritus Professor of Surgery in Victoria University, Messrs. C. Wright & Co. of 108, New Bond-street, London, W., have designed a very useful guard, or shield, for protecting the interior of the ear from injury when it is to be syringed. A shield is to be placed across the external ear, one end resting on the temple in front and the other over the mastoid process. The point of the tube of the syringe can then be passed through an aperture in the shield and moved about freely in any direction. A piece of metal of a globular form is made to travel along the tube by a screw action, so that while this movable screw-nut will rest against the hole in the shield the tube can only pass through it to the exact length

previously arranged. The shield should be held firmly across the ear and there fixed by pressure of the thumb and one of the fingers of the left hand, the right hand being used in acting upon the syringe. In syringing the ear of a young child or of an irritable patient there is always a danger lest by some accidental movement of the patient the nozzle of the syringe should be suddenly pushed in too deeply, with the risk of touching some sensitive part of the meatus or even the tympanic membrane itself. We think this simple contrivance will be found to be very serviceable in some cases.

AN IMPROVED CATHETER.

THE catheter depicted below has been manufactured for me by Messrs. Arnold and Sons. The objects aimed at are to gain the pliancy of the gum elastic while retaining the many advantages of the metal instrument, and also to make the obstruction of the eye by clots of blood or mucus impossible. I make the new instrument with the last three or four inches in the form of a bangle, so that, while the lateral pliancy of a gum elastic is obtained, the necessary firmness in

the arc of the curve of a metal instrument is maintained. It is obvious, also, that though part of the elongated eye may be obstructed, this is very unlikely to occur to the whole. Again, in passing an ordinary catheter, say, through an old traumatic stricture, the necessary care, patience, and delay at the site of the obstruction result in the membrane being so moulded into the eye by the spasm set up that stress must be used either to remove or pass the catheter. The V-shaped end of the eye often then abrades the membrane in a manner which, if repeated, cannot fail to be of serious consequence to the patient. WILLIAM PAULSON, L.R.C.P. Lond.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 29, 1894.

THE General Order, signed by Mr. SHAW-LEFEVRE, M.P., and Sir WALTER FOSTER, M.P., fixing the rules for the election of parish councillors in England and Wales, including the date for the election, Dec. 4th, reminds us that we are on the eve of a change in parish life in England which may have very great consequences, and to which the medical profession cannot be altogether indifferent. Railways and telegraphs and marine engines have altered the complexion of the world beyond all recognition, and so facilitated the movements of men and goods that, however perfect parochial life and administration may be, it can never again be what it was in the days before these inventions. The Local Government Act of 1894 only supplements that of 1888, with which Mr. RITCHIE'S name will always be honourably associated; but undoubtedly it carries us back in some ways to the earlier periods of English history, when the affairs of the parish constituted the chief excitement of the inhabitants, and when people thought as much of leaving their parish as they think now of leaving their country. It will be very curious to watch the attempt to revive the parochial feeling in times so Imperial as those in which we live. There are those who do not like the experiment and anticipate no good from it. They see in it a risk of great evils in the administration of the Poor-law, and of that careless expenditure which is apt to happen when those who call the tune have not to pay the piper. It is undeniable that there are grounds for such fears; but, for good or evil, the experiment will have to be tried; and it is better perhaps to take the more hopeful estimate of the result than the less sanguine one. It must be admitted that rural life is sometimes dull enough to require and to justify stimulation. Whether we look at it from a social, or a sanitary, or an intellectual point of view, this is the case—so much so that the country districts are depopulated and the towns are crowded. It would be the highest feat of statesmanship to restore life and animation to country life and people our smaller parishes with village HAMPDENS and MILTONS, even if "mute and inglorious." But, alas—

> "How small of all that human hearts endure
> That part which laws or kings can cause or cure."

Certainly such an achievement will not be the result of such measures as the Parish Councils Act, or, to give it its more dignified title, the Local Government Act, 1894. Still it is a sign of the times, and as belonging to the most progressive of the professions we must give it fair play and do our part to ensure it a fair trial. On the face of it it is a measure which cannot but be of interest to members of our profession. The lower franchise on which the rural district councils and boards of guardians will be elected is an immense change for better or for worse, as is also the elimination of the *ex officio* element in their constitution. Where members of our profession are not excluded from office as parish councillors or district councillors by holding appointments for which they are paid we cannot but hope that many will be willing to give their services as such. Their knowledge of all classes of the people, of the districts and of their sanitary wants, will be invaluable, and their presence in the council should tend to the elevation of business and of discussion. The power of the parish council in respect of sanitary work is very limited, as we have shown when the Bill was under discussion in Parliament, and consists in little more than the power of "dealing with any pond, pool, open ditch, drain, or place containing, or used for, the collection of any drainage, filth, or stagnant water, or matters likely to be prejudicial to health, by draining, cleansing, covering it, or otherwise preventing it from being prejudicial to health, but so as not to interfere with any private right, or the sewage or drainage works of any local authority." Still it has various powers, the wise exercise of which must affect generally the welfare of the parish—as of appointing overseers and the assistant overseer; the powers of the present vestry and churchwardens, except as relates to the affairs and charities of the church; power to complain of unhealthy dwellings &c.; power to represent the need for allotments; power to execute the Adoptive Acts, after they have been adopted by the parish meetings; any sanitary powers of a parochial committee delegated by the district council, &c. &c. It would be unfortunate if the parish councils, which are to discuss and take action on such questions, were left to be composed solely of the most uneducated and inexperienced of the electors who might chance to be on the parochial list of electors. The influence for good in the future, in the parish councils, of any persons more versed in affairs, must depend much on their attitude towards the new bodies at the first election. *A fortiori*, all that we have said to induce the members of our profession to take an interest in the parish councils, and, where possible, to become members, applies to the case of the district council and of the rural district council with its larger powers, which will become both highway authority and rural sanitary authority, and to which the Local Government Board may give by general order all urban powers, not only under the Public Health Acts but other Acts—e.g., the Housing of the Working Classes Act. One great point to press in criticising such legislation as this is the weight of responsibility which it throws on the Local Government Board. We have sometimes seen indications of a tendency to laxness or a *laissez-faire* feeling in this Board which the very multiplication of its duties tends to foster. In regard to the present Acts such indifference would be next to criminal. The Board must know that such legislation would never have been conceded but for the check provided in its own control over expenditure, the acquisition of land, and the application of other Acts of Parliament. We may expect from it a firm use of its controlling powers in the interest of the reputation of local government.

As far back as 1888 there was an outbreak of epidemic skin disease in which fifty patients were attacked in the Greenock parochial asylum, but no account of it was published until attention had been drawn to the subject by the

far more important epidemic of 1891, which was reported in Dr. SAVILL'S careful monograph of 1892 and elsewhere. In 1891 424 cases occurred in public institutions, of which 381 occurred in the Paddington, St. Marylebone, and Lambeth Workhouse infirmaries. Smaller outbreaks have occurred in these and other infirmaries since, the most important being that of the Bethnal Green Workhouse of 1893, in which there were 86 cases, and this year there has been a serious recrudescence, in which the St. George's-in-the-East, the City of London, and the Marylebone infirmaries are the chief sufferers.

Too much stress must not be laid upon the exact figures either as regards the number of cases or the mortality percentage, for while, on the one hand, owing to the resemblance of the skin lesions to familiar forms of dermatitis, isolated cases may, and no doubt have, been overlooked, on the other hand, it is more than probable that some cases of ordinary dermatitis have been included in the supposed epidemic category. Making, however, every allowance for these errors, many of which are at present unavoidable, there remains a very large number of undoubted cases of a disease to be accounted for—a disease which appears to be *sui generis* in the way in which it occurs chiefly in public institutions in which are congregated large numbers of aged and other persons with constitutions more or less broken down by various diseases and adverse circumstances. While a few among the young and vigorous adults have been affected, children have rarely suffered, and in the case of its occurrence the disease has run a mild and short course amongst them, the skin lesions having seldom been very widely spread over the body surface. On the other hand, in the elderly and diseased the eruption has frequently been universal and the death-rate has been proportionately high. The danger to life from the exhausting effect of any form of dermatitis which involves the whole cutaneous envelope is well known, even in persons whose constitutions have not been previously impaired. As a rule, the form and extent of the dermatitis were not only the most conspicuous but also the most important elements of the disease, the constitutional symptoms, when present, being in proportion to the severity of the dermatitis. This, however, was not always the case, and while slight constitutional symptoms were very often present it was said that there were cases with identical constitutional symptoms in which there was but little eruption, and even in some cases that there was no rash at all. As influenza was also prevalent and the constitutional symptoms were not very distinctive, it is obvious that there might easily be fallacies with regard to this point. The most constant general symptoms were anorexia and asthenia, amounting in some cases to prostration; either vomiting or diarrhœa, or both, were not uncommon; and enlargement of the occipital and post-sterno-mastoid cervical glands was very common except in very old people, while the submaxillary glands were only occasionally enlarged. Although sore-throat was occasionally present and head eruptions were frequent this glandular enlargement did not appear to be due to local causes, as it occurred in cases where the head eruption was absent or trivial, and was, therefore, analogous to the general glandular enlargement so frequently found in rötheln.

Pyrexia, most observers concur in saying, was absent in the early stage, but a moderate rise of 2° or 3° F. was sometimes present when the dermatitis had become extensive. One observer, however, in the present epidemic includes cases in this category in which there has been a temperature of 103° without rash, but with general aching; and he therefore lays more stress on the constitutional symptoms than the majority of those who have had charge of cases. Although the moderate rise alluded to characterised chiefly the universal type, a marked fall to the subnormal was the usual precursor of the fatal issue, which was ushered in by subsultus tendinum, shallow respiration, and coma, unless death was determined by the previous disease or by an internal complication. In diffuse cases of eruption albuminuria was frequent from renal congestion, but it was never an early symptom. When we consider the eruption itself we find that it begins either as an apparently local affection on one limb, or, and more often symmetrically, chiefly on exposed parts, such as the forearm and the hand, the face or scalp. This was the case in 57 per cent. of the cases analysed by Dr. SAVILL, while only 17 per cent. began on the lower limbs, and in many of these there was an ulcer of the leg. This combination of facts suggests that the skin is primarily invaded from without, in some cases at all events, while in the symmetrical cases infection, rather than local contagion, is indicated. The two modes of invasion are not incompatible, as we find an analogue in anthrax, which may begin either as a pustule of local origin (but subsequently infecting the whole system) or by the still more deadly method of inhalation and almost immediate general infection. That the disease was propagated from one individual to another is indicated not only by the number of cases of workhouse inmates successively attacked, and by the way in which one ward after another was invaded, but by the circumstance that the attendants on the sick and the ward servants were sometimes affected, though comparatively mildly. Moreover, the affection was sometimes aborted by the application of iodine, collodion, and other microbicides to the primary patch of disease.

The initial lesion varies; in by far the majority of cases it occurred in the form of irregularly grouped bright-red acuminate papules, attended by marked itching and seated at the follicles. Some of these after a time coalesced into red, delicately scaly patches, and then gradually spread over the body, becoming more and more scaly until the eruption assumed the form of a dry exfoliating dermatitis, indistinguishable from pityriasis rubra of the most typical character. This eruption was by no means always universal—in half of the cases in the great epidemic, and a quarter in the Bethnal-green outbreak, it was not present. Again, while most of the pityriasis rubra cases were dry throughout their whole course, in two-thirds of the cases observed in the 1891 outbreak the dermatitis was of a moist or eczematous type, the papules being crowned with vesicles almost from the commencement, these speedily coalescing into a diffuse weeping surface.

The next most frequent mode of onset was that of a papular erythema, which, Dr. SAVILL says, presages a severe form of the disease; or the papules might be large, flatter, and wheal-like, but of a red colour. He also

observed what he calls a "scurfy erythema" in mild cases, and in rare instances flat red papules, which involute in the centre and spread peripherally, and thus form rings. Whatever the mode of onset the tendency is to develop into either the dry or moist kind of eruption above described, to spread over the whole or greater part of the body, in about half the cases accompanied by abundant exfoliation of the epidermis, which in different instances may form branny scales, large flakes, or even sheets of exfoliated epidermis, so that epidermic casts of the hands or feet may be shed. The affected derma is very markedly infiltrated, and while there is itching at the onset, subsequently the feeling is that of heat and tension. When the disease is proceeding to a favourable termination the swelling, heat, and tension subside, the hyperæmia abates, and the epidermis is often left like a piece of parchment until the new skin beneath is fully matured. The surface is sometimes left deeply pigmented, while the hair and nails may be shed completely. This falling of the hair is a very characteristic and frequent phenomenon, and sometimes occurs when there has been very little hyperæmia of the scalp itself, so that alopecia would not have been anticipated. Boils and carbuncles are occasional sequelæ, and when the face is attacked conjunctivitis, sometimes very severe, is frequent, and even iritis is occasionally observed.

On review of this remarkable epidemic, which occurs chiefly in the summer and autumn months, we find ourselves confronted with what we must regard as a universal exfoliative dermatitis, though many cases fall short of universality just as many cases of the exanthemata have a sparse or limited instead of a general distribution. Its contagious character is not very intense, for, although isolated cases no doubt occur in the community at large, it is evidently essential that, on the one hand, the contagium should be concentrated, as it would naturally be in a large Poor-law infirmary, and that the individual exposed to its influence should present a congenial soil, which it appears to find where the constitution has been impaired by age or disease; the hardier constitution, even when unable to resist it entirely, gives it but slight foothold, so that it runs a mild and short course. This limited power of contagion finds analogies in other diseases, such as tuberculosis, which may infect an otherwise healthy organism when the poison is very concentrated in a close atmosphere; but, while the skin is only infected with difficulty by tubercle, in this epidemic dermatitis the microbe probably invades the organism through the skin. The researches of Dr. SAVILL and Dr. RISIEN RUSSELL render it very probable that the medium of contagion is a form of coccus, and, while it resembles somewhat the staphylococcus pyogenes albus, it presents certain differences in cultivation from that well-known organism. It is probable also that the disease is one of the skin itself, and not one primarily of the organism as a whole, with a certain cutaneous expression of the general infection as is seen in the exanthemata.

Nothing in dietary or in the milk or water-supply has been shown to have any etiological bearing on the disease, for although in one institution the outbreak gradually subsided when the milk-supply was changed, in another similar institution the alteration of the milk-supply had no effect. Close search into the clothing and other circumstances in the life of the sick pauper has hitherto failed to prove anything as to the origin of this mysterious malady, and we await with interest the result of the inquiry now being carried out on behalf of the Local Government Board in the hope that some etiological factor may be discovered.

THE problem of the actual relationship between cow-pox and small-pox has been examined and discussed ever since the introduction of vaccination, and it can hardly be said that its solution has been finally determined. For whether JENNER himself did or did not imply by the use of the term "variola vaccinæ" that human small-pox and cow-pox were identical in nature, though differing in manifestation owing to difference in soil, still the advocates of their identity have not been few, whilst experimentation has been directed to the subject over and over again. We need not pursue here the history of these experiments, which include attempts to infect cattle by small-pox effluvia as well as by inoculation of the lymph from small-pox vesicles, but may merely remark that the conclusions drawn from them have been variously interpreted, according to the preconceived bias of the interpreter. Thus, on the one hand, those who claim that there is nothing in common between the two affections stoutly deny that cow-pox can be produced by variolisation of the cow; whereas those who hold the contrary view not only affirm the actuality of this transference of the human disease to the bovine species, but maintain that we have herein a proof of the identity of the two conditions, and the explanation of the efficacy of vaccination as a small-pox prophylactic. The former class of dualists—pursuing the argument to its legitimate conclusion—would have us believe that the protective power of vaccination is limited to those who have been inoculated with the "vaccine" from the variolised animal, and do not hesitate to advocate the reintroduction of more direct inoculation in times of epidemic. The latter, believing in the doctrine of unity, see that there is no reason for distinguishing between any section of the vast vaccinated community. And surely, when the teachings of the experience of epidemics of small-pox are impartially weighed, the balance of evidence is so strong in support of the power of vaccination in mitigating as well as in preventing attacks of small-pox, that it becomes almost impossible to doubt the intimate relationship between vaccinia and variola.

This subject formed the basis of an interesting discussion at the recent meeting of the British Medical Association. Dr. MONCKTON COPEMAN, whose experimental work on the question is to be found in the May number of the *Journal of Pathology*, opened the discussion, and pointed out that of all who had attempted to variolate bovines the only one to arrive at a negative result "as regards the production of typical vaccinia, after one or more removes, as the result of variolation of the cow or calf" has been M. CHAUVEAU in 1865, whose famous report (Lyons Commission) has been the staple of all the arguments since adduced against the assertion that this modification of variola can take place. Whatever be the explanation

of M. CHAUVEAU'S failure, and it is undoubted that vaccination of children from his variolated cows induced contagious small-pox, the fact that in other hands positive results have been obtained over and over again compels the admission that some fallacy must underlie the observations of this able experimenter. It certainly may be said that more light is required to be thrown upon the reasons for failure in results of inoculation of bovines with variolous lymph, and upon the number of "removes" at which it may be considered safe to use the vaccine on the human subject without incurring the risk of producing the disastrous effects seen in the days of small-pox inoculation. The contribution of Dr. VOIGT of Hamburg to the discussion at Bristol was highly important, and raised numerous questions of interest, showing his firm belief in the fact of "variola vaccinæ," which he predicted would be scientifically verified in 1896, the centenary, as a matter of curious fact, of JENNER'S first inoculation of cow-pox in man. No single speaker in this discussion supported the doctrine of non-identity, so that we may take it that the current of scientific thought and observation is all tending in the other direction.

The record given by Dr. KLEIN in the recently issued Report of the Medical Officer of the Local Government Board adds one more to the list of positive results to those obtained by CEELY and BADCOCK, SIMPSON, KING, HIME, and COPEMAN, and many foreign observers. Dr. KLEIN'S first observations were made with lymph sent by Dr. SIMPSON of Calcutta, the source of which was vaccine vesicles on children who had been vaccinated with lymph from a calf, which in turn had been inoculated by lymph from another calf inoculated from a small-pox case. Dr. KLEIN produced with these specimens typical vaccinia both in calves and infants. A like positive result was obtained in one of two series of experiments with human small-pox lymph, and the figures given in the report bear out his testimony to the typical character of the vaccinations that were produced. No doubt it would have been more conclusive had it been possible to test these vaccinated children by submitting them to re-vaccination; but that could not be done. The suggestion has been made in such experiments that perchance the children have been accidentally inoculated with vaccinia, but the skilled experimenter is fully aware of this and other fallacies, and may be relied upon to avoid all risks of such contamination. There is, however, yet lacking the important proof of the identity between variola and vaccinia which would be afforded by a discovery of the micro-organism that analogy teaches is probably the infective agent here as in similar diseases. Dr. KLEIN has found a definite bacillus containing spore-like bodies to be present in both variolous lymph and vaccine lymph. Dr. MONCKTON COPEMAN has found a number of micro-organisms, pathogenic and non-pathogenic, which, however, are not distinctive or specific, but rather to be regarded as non-essential and extraneous. Dr. KLEIN has not succeeded in cultivating the bacilli in artificial nutritive media; but he does not regard them as adventitious, for he says they are invariably present even in those samples of lymph "in which none of the notoriously adventitious microbes of lymph could be demonstrated either by cover glass specimens or by culture." Hence it seems to us that bacteriological investigation may be able some day to afford the solution to this very vexed question; that it may demonstrate the scientific grounds of the practice of vaccination, and determine once for all the degree and nature of the kinship between cow-pox and small-pox, as well as between the former and other animal diseases of similar character.

Annotations.

"Ne quid nimis."

THE LATE DR. W. A. GREENHILL.

BY the death of Dr. William Alexander Greenhill the medical profession in England has lost one of its most distinguished ornaments. He practised as a physician first in Oxford, and subsequently for many years at Hastings; but he was better known in the world of literature as the greatest medical scholar in England within the present century. The reverence for truth in word and work, the studious and scholarly habits which nearly seventy years ago were nurtured at Rugby under the care and guidance of the famous Thomas Arnold (whose niece Dr. Greenhill afterwards married), continued to grow with his growth and to ripen with his years. In spite of declining health and failing sight, but with intellect undimmed and in the full consciousness of the precariousness of life, he pursued with pious hope his learned labours up to the moment of death from syncope on the 19th inst. Though his published writings are characterised by completeness, scrupulous accuracy, and lucidity they scarcely adequately represent the wide range of his knowledge or the superior qualities of his mind. Had he been less exacting in what he demanded of himself and less laboriously painstaking in all he undertook his gifts to literature might perhaps have been greater and more frequent. As it is, however, he has done enough for his own and for our country's fame. By his contributions to medical scholarship he long since gained the highest reputation in the estimation of Littré, Leclerc, Daremberg, Ermerius, Henschel, and other continental scholars. His articles on Greek and Roman Physicians and Medicine in Sir Wm. Smith's Dictionaries of Greek and Roman Biography and Mythology and Antiquities are unexcelled. At once learned and clear, conservative but critical, they are models of good workmanship. Among other of his literary labours Dr. Greenhill edited a critical edition, with Latin translation, of Theophilus' "De Corporis Humani Fabrica" for the Clarendon Press, and the Latin edition of Sydenham's Works for the Old Sydenham Society. He also translated from the original Arabic Rhazes' Treatise on Small-pox, and prepared for Macmillan's "Golden Treasury Series" the best and most complete edition extant of Sir Thomas Browne's "Religio Medici." His moral nature, like his intellect, was simple yet strong, modest but fearless. He was ever ready to help the needy and to protect the weak. The strenuous and successful efforts which, with a few others, he made some years ago to ameliorate the sanitary and social surroundings of the poor of Hastings constitute only one example among many of his practical philanthropy. As a physician and as a citizen he attained the high Hippocratic standard: Ἁγνῶς δὲ καὶ ὁσίως διατηρήσω βίον τὸν ἐμὸν καὶ τέχνην τὴν ἐμήν. In purity and in holiness he spent his life and practised his art.

MR. GLADSTONE'S EYESIGHT.

WE are glad to be able to state that the operation for cataract performed on Mr. Gladstone's right eye last May has given an excellent result. At the date of our last

annotation there was enough of residual opacity in the pupil to prevent accurate vision, and it was believed that a needle operation would be required.[1] Subsequently, however, the sight cleared so much that for some weeks past Mr. Gladstone has depended entirely upon this eye for reading, so that when on the 20th inst. Mr. Nettleship found that the eye could read the finest type (No. 1 Jaeger) and see distant objects well he decided not to interfere. The cataract in the left eye, though still immature, has made progress since the right was operated upon, and this eye is now no longer useful for reading ordinary type. Mr. Gladstone is in very good health and spirits, gets through a large amount of reading and writing, and takes walking and carriage exercise daily.

THE DIFFUSION OF SMALL-POX.

LAST week witnessed a further decline in the number of patients under treatment in the small-pox hospitals in and belonging to the metropolis, the number on Saturday last having been 93 in the institutions of the Metropolitan Asylums Board and 7 in Highgate Small-pox Hospital, a total of 100, the smallest for many weeks. There were 18 admissions in the week to the ships on the river, including 5 from Marylebone, 4 from Kensington, and 2 from St. Pancras. No death from small-pox occurred in London during the week. In the provinces, the Midlands still gave evidence of small-pox being in their midst, Birmingham having little short of two score fresh cases and 2 deaths registered, the cases in hospital rising from 98 to 104. At Willenhall the disease has not declined as was hoped and expected, 18 fresh attacks having been chronicled since our annotation of last week and 35 patients being still in the hospital, the cases now again showing increase. Wolverhampton, with 1 fatal case, Aston Manor, and Smethwick each had 1 attack last week. Manchester had 3 cases, though Salford was free; but Liverpool had upwards of 20 cases. Leeds had fresh attacks last week, and Hartlepool was not wholly free.

THE INTERVIEWER AND "A PHYSICIAN OF SOME NOTE."

RECENTLY we had to write with much regret on the danger of even prominent members of the profession forgetting the essential privacy and dignity of the profession out of complaisance to the Interviewer—taking him as it were into their confidence—making, however unconsciously, "a show" of their work and finding themselves the next day the heroes of a column and a half of descriptive matter in a newspaper. We have since found almost a worse development of the same thing. *Cassell's Saturday Journal*, of which better things might have been expected, has lately devoted two columns to "The Opinions of a Physician," being the answer to the question "Ought Invalids to consult a Specialist?" We are informed that "this advice was given (gratuitously) to a representative of *Cassell's Saturday Journal* by a physician of some note in the profession." We may at first be apt to think that when a noted physician gives advice gratuitously he must be influenced only by the purest and most unselfish motives. But when this advice takes the form of wholesale disparagement of the bulk of his profession and unqualified laudation of his own order of consultants or specialists, the purity of the motives becomes much more than doubtful. The opinions are not only gratuitous, but anonymous. The discretion of such an arrangement is more obvious than its courage. No consultant would be bold enough to put his name to such a tissue of detraction and disparagement of the general practitioner as this paper by "a physician of some note," which must be read to be believed. Every paragraph is libellous against a profession educated, registered, and examined as no profession ever was before. The burden of all is that the general practitioner is an ignoramus, who, if he does not deliberately keep patients on his hands, is not so ready as he should be to consult leading physicians, and that the cheapest thing for patients to do is to go to the consulting physician, when the cure is generally speedy. "My advice to everybody who is suffering from any serious or troublesome complaint is, 'Consult a medical man who has made a special study of the particular disease.'" "Money would be saved and much misery checked if a specialist were consulted at the outset." Exactly so. Send for me, the specialist of the "big toe" or the "little finger." We may trust the common sense of the public to deal with such libels on a great profession. We pity the unfortunate public if it is to map out every organ of the body to its several specialist, each pulling his several ways and each magnifying his specialty at the expense of all the others, and overlooking the patient in a tonsil or a toe. General physicians and general practitioners could unfold sad tales of this kind. But we are taking such literature too seriously, and we can only put such a wail from "a physician of some note" down to his perception of the fact that general practitioners are becoming increasingly capable of dealing, as he says, with every ill which flesh is heir to. When the limitation of these powers is reached they are only too glad to call in an enlightened consultant of broad sense and special knowledge, but not "a physician of some note," who evidently finds that the public appreciation of the general practitioner is excessive.

[1] THE LANCET, July 23th, 1894.

FATAL CASE OF HYPNOTISM.

AN alleged fatal case of hypnotism, to which we briefly referred last week, is reported from Hungary. Two versions of the affair have appeared in some of the leading journals. The first account is as follows: A young lady named Fräulein Ella Salomon was hypnotised by a lay hypnotiser named Neukomm. The hypnotiser fixed as the subject of his experiment the condition of his sick brother at Werschetz. In about twelve minutes the medium exclaimed: "I am asleep." The young lady gave signs of great excitement, and under hypnotic influence began to give a minute description of the condition of the patient, entering into technical particulars regarding the state of his lungs, and concluding by saying that death was impending. Immediately afterwards she fell back senseless, gave a piercing shriek, and death ensued in a few minutes. According to the other story the affair takes a very different colour. Herr Neukomm asserts that the young lady in question asked to be hypnotised by him, that he refused owing to the want of sufficient time before supper, that on his refusal she gave a shriek and fell back senseless, and that all efforts to restore consciousness prove fruitless. Between these two accounts there is evidently the most radical discrepancy. Dr. Krafft-Ebing, who seems to accept the former account, has given his views upon the subject to the Vienna press. He says the unfortunate victim, Fräulein Salomon, was induced to undertake a task which involved severe effort on her part, inasmuch as she had to prepare a report on the condition of a disease and to deliver an address upon it which, for such a highly nervous and excitable person, was extremely fatiguing. She had also to announce the patient's impending end, which must have been painful to her. Her death he attributes "to sudden breakdown and cessation of activity in the brain due to emotional psychic shock." He thinks she might have died in the waking state from a similar shock, and that "the hypnotic state can only be regarded as the cause of death in so far as it occasioned excessive activity in an already exhausted brain." Dr. Moriz Benedikt has also given his

views on the subject. He thinks it unnecessary to discuss with sensible people the existence of clairvoyance. Nobody in his right mind, he holds, can believe that Fräulein Salomon while under hypnotic influence displayed medical knowledge of which she was ignorant in her natural state. He does not believe that the young lady died in a hypnotic trance. It is said that the body of Fräulein Salomon has been exhumed, so there is some prospect that the truth of this strange affair may be made clear. Whatever may have been the precise circumstances of the unfortunate young Hungarian lady's end, it is impossible to regard these sensational displays without grave disapprobation. That any good end is achieved by them, or that information can be gained in this way that is inaccessible by the ordinary channels, is, in our judgment, impossible. These displays seem simply to minister to a craving for notoriety, or to a morbid curiosity about certain psychological phenomena which are best studied apart from hysterical girls. The time may be near at hand when it will be imperative for the Legislature to consider whether the practice of hypnotism should be any longer permitted to unqualified and irresponsible persons. We are indebted to the *Times* report for most of the above facts.

THE POISON OF SEWER EMANATIONS.

THE fatal case of poisoning by sewer air, notes on which Dr. Webber contributed to our columns last week, while presenting several features of clinical interest, affords also further evidence, which accumulates every day, of the obscure toxic nature of sewer emanations. Experiments which have been rather freely made of late seem to have established that the poisonous nature of sewer air is not to be traced to micro-organisms, and indeed careful bacteriological examination has shown that sewer air is remarkably free from microbes, and superior even in this respect to the atmosphere of the common breathing level. Moreover, it is doubtful whether currents of gases are ever able to detach microbes from the sticky and slimy contents of the sewer. In the light of these results, therefore, we may refer the toxic symptoms which are produced by the inhalation of sewer air not to the direct action of organisms, but to the toxic substances which, it may be, they are concerned in producing from or evolving out of fæcal matter. In other words, it is not improbable that the poison of sewer air is a gaseous ptomaine. The precise nature of the poisonous action of this substance is by no means understood, but, as is well known, it in many instances proves the forerunner of various maladies in different persons. Thus, according to circumstances, in one it may lead ultimately to diphtheria, in another to typhoid fever, in another to scarlet fever, and, as illustrated in the fatal case which Dr. Webber records, even to anæmia of a distinctly profound degree. Sewer poison acts undoubtedly by lowering the general vitality of the system which reduces almost to vanishing point its powers of resistance against the invasion of disease. Whatever chemistry or bacteriology may or may not have to offer in explanation of the poisonous effects of sewer air, man has been led intuitively to avoid it and to exclude it as far as possible from his surroundings; indeed, he has instinctively accepted as a hygienic axiom, so to speak, that sewer gas must be avoided if health is to be preserved. That sewer gas is a serious and powerful factor in the production of disease, although *per se* it is not responsible for the direct production of specific diseases like typhoid fever, diphtheria, &c., but rather reducing the subject to a condition of low vitality which predisposes him to such, is strikingly illustrated in a series of experiments instituted a few months ago by Dr. Alessi.[1] This investigator after inoculating several animals including rats, rabbits, and guinea-pigs, with a small dose of an almost harmless growth of the typhoid bacillus exposed one set to ordinary conditions of environment, while another set was placed in a box communicating with the sewers. Of forty-one rats, which, although infected with the typhoid bacillus, had not inhaled sewer air, only three died. On the other hand the rats exposed to the air of drains soon lost their vivacity, grew thin, although they ate voraciously, and of the forty-nine inoculated, thirty-seven died exhibiting the typical symptoms of typhoid infection. Precisely the same thing happened to guinea-pigs when similarly treated and placed under similar environment, while of eleven inoculated rabbits exposed to sewer air, every one died, but not one of the inoculated animals kept in ordinary surroundings succumbed. Rapidly fatal results were produced also when a similar experiment was made, in which a small dose of a weak culture of the bacillus coli communis was substituted. This extremely interesting investigation led Dr. Alessi to observe that it was during the first two weeks of exposure to the noxious gases of the sewer that the animals were most easily predisposed to typhoidal infection, for no less than 90 per cent. of the animals inoculated died during the first fortnight, whilst 76 per cent. succumbed in the third week. This may partly explain, says Dr. Alessi, how it is that some people who habitually breathe contaminated air do not appear to suffer any evil results, having gradually in course of time become accustomed to it, whilst a stranger exposed to the same condition without previous experience may suffer seriously. Different people, however, enjoy varying degrees of immunity. More striking and conclusive experimental evidence than the foregoing of the seriously important *rôle* which sewer air plays in the production of disease could not, we imagine, be obtained, and the results should lead all concerned in improved sanitation to redouble their efforts to prevent the inhalation of sewer emanations. Already we have indicated the measures which civilised countries have instinctively been led to adopt to avoid as far as possible the contamination of air with sewer air, and Dr. Alessi's experiments show the prudence of such precautions, and should teach us to shun sewer emanations as we would a powerful poison. Recently the improved ventilation of sewers has received a large share of attention, and it is obviously desirable that not only that ventilation may be secured, but also that steps should be taken whereby the destruction of sewer gases by cremation or by efficient disinfection should also be effected.

[1] Nature, May 3rd, 1894.

THE RÔLE OF SURGERY.

THE Students' Number of *Guy's Hospital Gazette* contains a reissue of a lecture delivered to the students by Mr. Thomas Bryant ten years ago on the "Art and Practice of Surgery." The observations may be read with as much profit now as then by all students about to travel along "the rough, difficult, and possibly dangerous" road of surgery. Mr. Bryant defines a trustworthy surgeon as not merely a man with a surgical diploma, but a man who practises for the good of those who entrust their healths to him and who finds his personal interests identified with those of his patients. For the proper study of the subject lectures and text-books must be supplemented by a study of the larger book of nature, and this must be begun early in the professional career of the student. Mr. Bryant points out that from the scientific point of view no distinction can be drawn between medicine and surgery, the separation between the two being entirely arbitrary, and rather accidentally anatomical than pathological; and he brings this forcibly home by his words of warning against the attachment of over-importance to

operative work. He wishes all students to bear in mind that the operative part of the surgeon's duties is neither the most important nor the highest. To aid nature is the surgeon's first duty; to cure rather than remove injured parts. The scientific surgeon—the truly scientific surgeon—is more satisfied when he saves an injured part with a very slight operation or without operative interference at all than he could ever be by the exhibition of some cleverly truncated limb or excised joint. In all cases it must be considered not whether the case could be cured by operation but whether it could not possibly be cured as well without. All reparative and curative processes are in their essence natural. In operative surgery for the treatment of disease or injury the scientific surgeon's desire will be to employ his art to guide and utilise physiological processes, with the object of removing all obstacles likely to interfere with nature; and operative surgery is the last resource, only to be used when all minor means have proved inefficient. What John Hunter said ninety years ago is as true now as it was then, namely, "that surgery consists in curing a disease rather than in the removal of it by mechanical means." Students of Guy's Hospital could not begin their studies under happier counsel than that supplied by Mr. Bryant's wise and kindly words.

TEMPERANCE BIGOTRY.

WE are indebted to the Penzance Board of Guardians for a fresh proof of the fact that even the extreme of virtue constitutes a species of vice and a cause of mischief. In their case (almost the whole board are teetotalers) a love of abstinence in respect of alcohol has deepened into an obstinate and exclusive devotion. Recently they forbade its introduction to the workhouse, and they confirmed this arbitrary measure by refusing to defray the cost of a bottle of champagne purchased for the use of an inmate by their medical officer. The latter, however, insisted upon his right to prescribe this remedy if needful, and effectually vindicated his position. As a consequence there were laid in for use on occasion two bottles of brandy and one of champagne. The guardians are scarcely to be congratulated either on the moderation of their views or on their penny wisdom. We yield to none in our advocacy of temperance or of total abstention from alcoholic stimulants where this is called for. The case before us, however, touches another subject—that of illness. There are times at which alcohol is in this relation an important medicinal agent. As such it is known to exert a definite influence upon the course of nutritive changes in the body, which is for certain purposes wholesome and beneficial. It is useful in many states of exhaustion, and invaluable at times of emergency on account of its convenience. In losing it we should part with an effectual aid to recovery and one of our best means of maintaining the functions of old age. No other known substance can exactly or adequately fill its place as a remedy, and we trust, therefore, that the day is far distant when its legitimate use in this way will be hindered by the misdirected zeal of teetotal authorities.

ACCOMMODATION IN THE HOUSE OF COMMONS.

THE Committee which recently concluded its inquiry respecting the growing need of increased accommodation in the House of Commons has reported that it does not think it desirable at present to enlarge the existing building. There was, however, a marked difference of opinion on the subject among the members of the Committee. Various alterations and improvements have been suggested both by the allocation to the House of Commons of space at present in use by the House of Lords and also by rearrangement of space in the Lower Chamber. A much-needed improvement, considering the size of the staff employed, is the enlargement of the kitchen, and further accommodation has been made with respect to the dining-rooms. Among the more needed changes the Committee recommend several alterations in the accommodation meted out to the "Press," which for a long time past has been overcrowded. Although not needed, perhaps, from a sanitary point of view, the abolition of the old central and badly illuminated swing-door leading to the reporters' gallery and the substitution of an entry at either end of the gallery will lead to considerable evenness of temper on what gallery men know as a "busy night." The heavy brass work protecting the glass panels of the door coming in contact with the head of a person on one side by the too precipitate movement of a person on the other side, aided by the darkness, has more than once been the cause of "bad blood." Alterations are also suggested for the comfort of reporters both for preparing their "copy" and for the better enjoyment of their hastily taken meals, but much remains to be done before the accommodation can be called worthy of the capital of the world. The general question of ventilation has lately occupied the attention of members who have taken advantage of "question time" to bring the matter before the House, and no doubt there is still room for improvement in this direction; but having regard to the inquiries and reports so recently made by Select Committees in 1886 and 1891, and to the late period of the Session, the present Committee decided not to report upon the matter. The estimated cost of carrying out the Committee's suggestions is £14,000.

SCIENCE IN PRACTICE.

UNDER the heading "Wanted—Scientific Assistants" a correspondent puts forward a plea for the utilisation in the service of scientific medicine of the fully trained men who annually enter our ranks. He urges that there is ample scope for the remunerative employment of many young men skilled in modern methods of research and observation to assist practitioners when required in pursuing the history and examination of cases, and in making necessary chemical and bacteriological observations. There is no doubt much truth in what he says of the loss to medicine in general and to the practitioner in particular of such observations upon cases which come under treatment but which are of necessity rarely put on record. And we take it to be a commendable sign of the progress of scientific ideas in medicine that the need and utility of such skilled and thorough examination of cases of diseases should have been not only felt, but expressed by one engaged in practice. Whether the plan which he suggests is practicable is another question, but within the past few months, as he is doubtless aware, a scheme has been set on foot which to a certain extent meets his desire. We refer to the Clinical Research Association, which has received the approval of some of our leading physicians and surgeons, and the object of which is to undertake for practitioners the chemical, microscopical, and bacteriological investigations that are becoming daily more essential to accuracy in diagnosis and rationalism in therapeutics. Lastly, it is interesting to find that M. Lépine, in the current number of the *Revue de Médecine*, of which he has long been editor, proposes that there should be established in France a doctorate in medical biology, to be granted after suitable tests to candidates who already hold the degree in medicine. M. Lépine's advocacy of this idea is largely based on the ground of training a professoriate in the sciences that are now becoming so intimately blended with practical medicine; but his plan might in course of time be found of the wider utility suggested by our correspondent. The degree is proposed by M. Lépine—himself, by the way, a physician who has made numerous important contributions to medical chemistry—to be conferred after theoretical and practical examination in general and special

physiology, organic and biological chemistry, bacteriology, embyrology, &c., and the presentation of a thesis on a "new point" (*sur un point nouveau*) in one of these sciences. The University of London might do worse than take the hint and consider whether another branch might not be added to those already established for its D.Sc. degree.

THE MODERN TREATMENT OF STRANGULATED HERNIA.

A VERY interesting series of cases of strangulated hernia have recently been admitted into St. Thomas's Hospital, illustrating in a remarkable manner the success of modern methods of treatment. Altogether, from the 12th to the 22nd of this month, fifteen patients from two to seventy years of age applied for relief; of these, twelve were suffering from inguinal and three from femoral hernia. Of the cases of inguinal hernia, eight required operation, while four were reduced either by taxis or the use of the warm bath followed by the application of an ice-bag. In two of the cases submitted to operation large intestine was present in the sac; one was a direct hernia and another an interstitial one.

PUBLIC MORTUARIES.

THE recommendation of public mortuaries made by a Redhill coroner's jury on Saturday last was wisely made, and one which we are glad to hear, from the words of the deputy coroner, is now being urged by coroners throughout the kingdom. The want has always been felt and for centuries has been patiently borne by the people, but it is only in these latter-day sanitary struggles that it has been called for so urgently as to be, in a few cases, accomplished. To the labours of the coroner for Central London, Dr. Danford Thomas, we owe much, and if his vigorous action be well supported the mortuary will, in a few years be a necessary part of every town and village. It is natural enough that the coroners should be the first to interfere, for in their useful and important vocation it is really essential that there should be a place of rest for the dead between the period of death and the inquest, and between the inquest and the burial of the remains. But this is not all that has to be considered; the public at large are deeply concerned in the matter. Many cases of death occur suddenly, in which a proper place to deposit the dead is required quite independently of an inquest. A dead body unprotected or badly cared for is in these days a moral as well as a physical anachronism.

HEALTH OF THE QUEEN OF ITALY.

COMMENTING lately on the tragic death of Baron Peccoz on a glacier on the Swiss side of the Monte Rosa, we referred to the grief and consternation it caused to Queen Margherita, within a few paces of whom the Baron instantaneously died. It now appears that Her Majesty has by no means entirely recovered from the shock thus occasioned. Every step, indeed, had been taken at the Riffel Alp, which was the Queen's first resting-place, to minimise her sufferings; medical aid was at once called in; and the attendance of the Marchesa Villamarina (head of Her Majesty's household, and long her confidential adviser at Court) was as unremitting as it was judicious. But, in spite of every care, symptoms of nervous prostration supervened, accompanied by rise of temperature, and followed by insomnia and general disquietude. When sleep was gained it proved too brief for mental and physical restoration, and, besides, during its incidence it was disturbed by haunting dreams, out of which Her Majesty awoke in alarm and exhaustion. Recovery was so far promoted as to admit of the Queen's removal to the Royal Palace at Monza, near Milan, whither the Crown Prince hastened to visit her; and by that time her condition was sufficiently improved to render another change of residence possible—Her Majesty's next destination being Stresa, on the Lago Maggiore, where she is still under medical surveillance. An element of anxiety in the Queen's case is due to the fact that she suffered from nearly identical symptoms sixteen years ago, when, upon the occasion of a Royal visit to Naples, His Majesty King Humbert, when sitting in the same carriage with Queen Margherita, the Prince of Naples, and the then Prime Minister, Benedetto Cairoli, was assailed by the would-be regicide, Passananté. The stab intended for the king was really inflicted on Signor Cairoli—a punctured wound which penetrated within a millimetre of the femoral artery,—but the shock sustained by Her Majesty was such that she did not for several years afterwards fully recover from the nervous susceptibility, broken sleep and haunting dreams which the diabolical deed occasioned. Queen Margherita, at no time robust and far too responsive to the sympathetic emotions aroused by the exceptional privation and misery of so many of her subjects, is not in a condition to incur without grave anxiety a repetition of nervous shock and its sequelæ of prostration and insomnia. It is, therefore, with gratification that we are in a position to state that her sojourn on the Lago Maggiore is having the soothing and restorative effects anticipated, and that there is every prospect of her return to Court and the "cares that link with empire" in better spirits and sounder health than her late tragic experience on the Alps rendered probable.

OCULAR MOVEMENTS AND THE CEREBRAL CORTEX.

IN a recent number of the *Journal of Physiology* there is an account of the results of an interesting investigation made into this subject by Dr. Risien Russell. After giving a short historical account of previous experimental investigations in the same field, from which it is evident that none but the lateral movements of the globes have been obtained by means of cortical excitation, Dr. Russell mentions that it had occurred to Dr. Hughlings Jackson that the reason of this was that these movements are so much more powerfully represented in the cortex than any other ocular movements, that they overpower the latter when the eye area is stimulated. Dr. Hughlings Jackson accordingly suggested to Dr. Russell that he should first exclude the possibility of the lateral movements taking place, by cutting the muscles which cause them, and then attempt to evoke the other ocular movements by excitation of the eye area of one cerebral hemisphere. Accordingly the external rectus muscle of the opposite eye and the internal rectus of the eye on the same side as the hemisphere to be stimulated were divided before the cortex was stimulated, and this procedure resulted in the demonstration that cortical excitation could produce upward and downward movements of the eyeballs as well as certain other movements of the globes. In another series of experiments the external rectus of the opposite side was alone divided, and in another series both lateral recti of the opposite eye. Under these various circumstances cortical excitation of one hemisphere gave rise to the following movements: (1) a direct downward movement of both eyes; (2) a similar upward movement of both; (3) movement of both globes downwards and to the opposite side; (4) movement upward to the opposite side; (5) a movement of convergence of the eyes; (6) a direct lateral movement towards the side of the hemisphere stimulated; and (7) a movement upward and to the same side. Of these movements the first four were obtained with great precision by the excitation of definite points in the eye area. Although Dr. Russell does not claim that his researches represent any attempt at precise localisation of ocular movements in the cerebrum, but only show the existence of

points in the hemisphere by excitation of which ocular movements other than lateral can be obtained, his experiments and his figures suggest that the localisation of these ocular movements is just as precise as that of movements other than ocular for which definiteness is claimed. As regards the last three movements in the list—viz., Nos. 5, 6, and 7—they were not obtained with the constancy and uniformity with which the first four were. The interest and importance of these experiments is very great, and neurologists have once more to acknowledge their indebtedness to the genius of Dr. Hughlings Jackson which suggested the research which Dr. Russell has so admirably carried out.

THE LUCKNOW DINNER.

THE annual dinner in commemoration of the relief of Lucknow in 1857 by the force under Generals Havelock and Outram recalls a heroic and brilliant episode of the Indian Mutiny. It is one of those occasions in our history which everybody recognises as being worthy of being commemorated. At the Hôtel Métropole on the 26th inst. a number of distinguished officers of the Mutiny period and belonging to the Lucknow garrison and the relieving force were present. The Medical Services were well represented. Among the medical officers present were Surgeon-General J. J. Clarke, Surgeon-General Jee, V.C., Deputy-Inspector-General Domenichetti, Deputy-Surgeon-General Swettenham, Surgeon-General Sir Anthony Home, V.C., and Surgeon-General S. B. Partridge.

THE CHARGES AGAINST A FEVER HOSPITAL IN THE POTTERIES.

THE Hanley, Stoke, and Fenton Joint Hospital Board, one of the largest hospital boards in England, has, we regret to hear, had charges of maladministration brought against it, and evidence in connexion with the charges has been taken by the sanitary committee of the Stoke-upon-Trent town council. Amongst the charges brought are the following: 1. A child sent back hungry and before it was cured. 2. Improper feeding of children. 3. Patients discharged with bed-sores. 4. Poor people treated with discourtesy. 5. Children sent home with vermin in their heads. 6. Mode of admission bad. 7. Nurses not of the right class. 8. General want of supervision and management. It seems to us that some of these charges are somewhat vague and even absurd, and certainly Charge 8 would appear to cover all the others. The committee which inquired into the charges state that no evidence substantiating Charges 3 and 4 was adduced. We read, too, that many of the witnesses expressed themselves perfectly satisfied with the treatment their children received in hospital, and that the children were properly washed and cared for. The committee, however, were of opinion that the charges made called for immediate investigation of the joint hospital board, and on the whole we are inclined to agree with the recommendation. Although, as we have said, the charges in some instances appear somewhat vague and vexatious, it is nevertheless best that, in the case of a large fever hospital, all the charges, if untrue, should be at once rebutted, while any which are proved to be true should be immediately remedied. Few places suffer more from having a bad reputation than a fever hospital, and in the interest of the public health of the district concerned in this case it is desirable that the fair repute of the hospital should be maintained. It would be well, generally speaking, if persons who bring charges against fever hospital administration would bear in mind the very serious difficulties attending it. However objectionable and unruly a patient may be it is difficult to discharge him while still in an infectious condition; and the fact that during the greater part of a patient's stay in hospital he is practically convalescent renders the necessary restrictions imposed upon his liberty more irksome than they would be if he were acutely ill. It is difficult, too, to inflict any punishment, since altogether distorted views of it are liable to be taken by the public. Furthermore, in some instances the hospital is administered from a distance, and many members of a joint board are purely ornamental. This, however, is hardly likely to be the case with all the twenty-two members of the Hanley, Stoke, and Fenton Board.

OLD CLOTHES AND STREET CONTAGION.

THE public health is under obligations to the Westminster Vestry for a decision recently arrived at by its sanitary committee. It appears that until the present time it has been customary in this district for dealers in old clothes and bedding to expose their wares freely upon the public streets; a change has come at last, however, and an objection to this practice as a ready and effective means of conveying contagion has brought us a stage nearer to the attainment of a sanitary ideal. Henceforth all dealers who may continue thus to advertise their goods will be liable to punishment for obstruction of the highway. There can be no question as to the advantage of the street clearance which will be effected by this measure, and we doubt much whether trade will suffer; there is, however, another aspect of the question which cannot be overlooked—namely, that seen from the sanitary standpoint of the salesman and the actual purchaser. Clearly the benefit promised by the new regulation will be only partial so long as means are not employed to ensure the disinfection of the saleable articles themselves. It is for dealers, in their own interest, to see to this. To a large extent, no doubt, the risk of infection is provided for by statutory notification, for clothes and furniture are certainly less likely to escape antiseptic purification than in days when each householder was, in regard to this matter, a law unto himself. It is probable, nevertheless, that infected clothes and other goods do still not infrequently find their way to the second-hand salesman. In view of this fact, it would be both a wise and a legitimate exercise of local authority to insist that all shops concerned in this trade be from time to time subject to a routine system of careful disinfection.

THE NOTIFICATION OF "CHOLERA."

A CASE of some importance in connexion with the notification of infectious diseases has been decided by Mr. Hopkins, sitting as magistrate in the Lambeth Police-court. A medical practitioner had been summoned by the Camberwell Vestry because he had failed to notify that a patient under his care had suffered from "cholera," notwithstanding that the death certificate in the case in question showed that the patient had died of "English cholera." The defence was that the case was not one of the infectious diseases to which the Notification Act referred, and that it was the clear intention of that Act to refer under the term "cholera" to the Asiatic disease, and not to the attacks of acute non-infectious diarrhœa, which bear such names as English cholera, cholera nostras, &c. This defence was accepted, and we think that the result was the proper one. Indeed, it was an error of judgment on the part of the Camberwell Vestry to take the proceedings in question, the more so because the Local Government Board only recently issued a notice expressing their willingness to add diarrhœa to the list of notifiable affections with a view of securing to local authorities information as to such cases as might be infective, and might not be recognised at the time as having relation to true cholera. But whilst we entirely endorse the action of the magistrate as being based on the obvious intention of the Act in question, it is by no means free from doubt whether the decision was a strictly legal one. We believe that it has been decided more than once that a definite

requirement in a Section of an Act is not to be set aside on account either of the title of the Act, or of any heading to such section. And the Local Government Board have, in one case at least, advised in a sense contrary to the magistrate's decision. Their advice was that "cholera" being under the Statute a notifiable disease the addition of any such adjective as "English" or "nostras," &c., to the word cholera, did not suffice to eliminate the disease from the operation of the section. The truth is that the Act already needs amending in several particulars, and it will probably be found expedient some day to be more precise as to what form of cholera is intended to be brought within the operation of the statute for the purposes of notification.

CARBOLIC ACID POISONING.

IN the last issue of THE LANCET we published and commented upon a series of deaths from carbolic acid poisoning, and we also drew attention to the want of some means of checking the unrestricted sale of the poison and to the necessity of further safeguards against accident with the same. We went even so far as to say that unless precautionary measures were taken additional statistics of deaths from phenol would be forthcoming. Since that notice our prediction has been verified. On Sept. 24th Mr. A. Braxton Hicks held an inquiry at Battersea upon the body of Annie Gambie, aged twenty-five, the wife of a police-constable. The deceased woman had taken her life by swallowing carbolic acid. The jury added to their verdict, "Suicide whilst temporarily insane," the rider that "Carbolic acid sold by grocers and chemists should be in blue fluted bottles and labeled very distinctly 'Poison.'" We entirely concur with the spirit of this recommendation, but would again suggest that additional security against accident would be obtained if some special indicator, such as a bell, were attached to the bottle. Of course, such precaution would not act as a deterrent against suicide. It then becomes a question as to how best to lessen the growing tendency for would-be suicides to resort to this method of compassing their own deaths. We fear that, since carbolic acid has been so universally accepted as a general disinfectant, it would be difficult to do more by legal enactment than to include it in the schedule of poisons. But as a check against suicide it is possible to go further by making it widely known how horribly painful is the suffering likely to be endured from swallowing the acid. In the first place, it acts as a powerful caustic upon the skin and mucous membranes with which it may be brought in contact, and causes as much pain as if the part had been burnt with a hot iron. Again, its effect on the respiratory tract is to induce at once a condition of acute suffocation. Should the individual survive the immediate irritant and toxic operations of the acid he will for an indefinite time be subjected to intolerable agony from the remote results induced by the escharotic upon the coats of the stomach. In addition to the precautionary steps before mentioned we would advocate that it would be well to have printed in large type on the label of each bottle a *résumé* of what we have just cited as the prominent symptoms of carbolic acid poisoning.

THE SPREAD OF DIPHTHERIA IN SCHOOLS.

THAT elementary day schools often form main centres for the spread of contagious disease is well recognised. There is hardly a large town in the kingdom in which the sanitary authority is not kept in touch with the school board for the purpose of notifying illness of scholars or of warning the schools of the presence of such illness in the homes whence they come. In times of epidemic such inter-communication between these public functionaries has often proved of much value; but, as has been so forcibly urged, the insidious manner in which one, at least, of these diseases spreads, must make it difficult to check its diffusion through a school community. Diphtheria may be propagated from the mildest case, and a child suffering from it in this form may be allowed unwittingly to attend school and be the means of infecting his or her companions. One way in which such infection may take place was mentioned by a correspondent in the *Times* of Monday last. He referred to the use of slates and the common practice which children have of erasing the pencil marks upon it. He mentioned the plan he pursues to obviate such risks as must undoubtedly be run in the transmission of diphtheria virus by the saliva—a plan which amounts to scrupulous cleanliness and disinfection of the humble instrument of the schoolboy's task—and, it may be added, that the like principles should be applied to other articles and utensils which may be used in turn by the pupils of a large school. Contagious ophthalmia has been traced to the use of towels, ringworm to that of brushes, and diphtheria might easily be conveyed through a drinking-cup. Mr. Acland has signalised his term of office as Education Minister by a vigorous insistance upon the maintenance of sanitation in elementary schools; a further step may well be the efficient supervision of all those institutions by medical officers and the inculcation of rules of prophylaxis of infectious disease.

ADVERTISING BY DENTISTS.

MR. T. F. TRACEY, Ph.D., a dentist registered on the ground of "being in practice before the passing of the Act," has written to the *Dundee Advertiser* and other papers making some extraordinary statements. He first remarks that is impossible for the poorer and middle classes to obtain the benefits of the dental profession except through those dentists who advertise owing to "the ridiculous if not iniquitous charges exacted by those who desire to suppress advertising." This, of course, needs no serious refutation. He then falls foul of the British Dental Association, of whom he says: "Those presuming, or rather impertinent, individuals have no constitution, because unauthorised either by the General Medical Acts or the Dentists Act, and no reason can be imagined for the General Medical Council becoming the creatures of those individuals except on the ground that the Council, knowing that it has treated the Dentists Act with impunity by misapplying the Dental funds, and their failure to make the annual return to Parliament of the 'true account of all sums of money by them received and paid under this Act' in terms of Sections 32 and 33 of that Act and otherwise, they dreaded the consequences which these presumptuous persons might entail on the members of the Medical Council by legal proceedings or otherwise." The British Dental Association requires no defence—the fact that most of the better class of dental practitioners are members, and the deterrent effect exercised upon quacks as a result of its prosecutions, afford sufficient evidence of its influence for good. The statements concerning the General Medical Council are absurd; indeed, the careful way in which all dental questions have been considered by its members entitles them to the thanks of the dental profession. The question of advertising is one which for some time past has been, and is still being, warmly debated, not as to whether it should be permitted or not—on that point most reputable practitioners agree—but as to the best methods of checking and stamping it out. Some are of opinion that all that is necessary is time—that is to say, that those whose names are on the register as being in practice before the passing of the Act, and over whom the Colleges have no control, will in course of time disappear. The Irish and Scotch Colleges compel those obtaining their diplomas to subscribe an undertaking not to advertise, and it is hoped that before long

the Royal College of Surgeons of England will be empowered to adopt the same course. Others, however, are in favour of immediate and more drastic measures through the General Medical Council, and with this in view a petition signed by a large number of dentists was presented to that body with the result that the Council resolved that the issue of advertisements of an objectionable character may easily be carried so far as to constitute infamous conduct in a professional respect. This, while only an expression of opinion, and not binding the Council to any course of action, may nevertheless be regarded as a warning. That advertisers are alarmed is shown by the formation of a "Society for the Protection of Advertisers." We hope, in the interests of the public, as well as those of the dental profession, that the General Medical Council will not lose sight of the matter.

THE publication in Vienna has commenced of a large work on "Special Pathology and Therapeutics," under the editorship of Professor Nothnagel, which is to take the place of the well-known cyclopædia edited by Professor Ziemssen. It is hoped that the work, which will consist of about twenty-two volumes, will be completed in the course of two or three years. Portions of various volumes have already been issued, including the articles on "Animal Parasites," by Professors Mosler and Peiper; "Migraine," by Professor Möbius; "Diseases of the Pericardium," by Professor Schrötter. A part of a highly elaborated monograph on "Poisons," by Professor von Jaksch, which will form one of the volumes, has also been published.

THE outbreak of skin disease in workhouses, to which we devote a leading article this week, is, we understand, involving the official staffs in considerable strain. In one workhouse infirmary, which we recently visited, there are 700 beds under the charge of three medical officers. If any large percentage of these inmates should be sick what chance would the medical officers have of making proper and minute clinical investigation into the cases?

ON Oct. 6th the London Temperance Hospital will complete twenty-one years of consecutive work. In honour of this "coming of age" the board of management have arranged to hold a reception at the hospital on Monday, Oct. 8th. Medical men can obtain cards of invitation by applying to the secretary, Mr. E. Wilson Taylor, at the hospital.

THE School of Pharmacy of the Pharmaceutical Society will be opened for the fifty-third session on Wednesday, Oct. 3rd. The distribution of prizes to the successful students of last session by the President, Mr. Michael Carteighe, will take place on the same day.

THE Introductory Lecture at the Royal Veterinary College will be delivered on Wednesday, Oct. 3rd, at 1 P.M., by Professor McFadyean, M.B., D.Sc., F.R.S.Edin.

WE are informed by the curator that the specimens added during the current year to the museum of St. Bartholomew's Hospital will be on view from Oct. 1st to 13th.

THE adjourned special general meeting of the members of the Medical Defence Union will take place at 20, Hanover-square, London, W., on Wednesday, Oct. 3rd, at 4 P.M.

Pharmacology and Therapeutics.

THE BRITISH PHARMACOPŒIA.

THE number of British dependencies from which communications have been received relating to the arrangements in regard to the next issue of the British Pharmacopœia has been increased by further reports, which have been received through the Colonial Office, from the Governor of Hong-Kong, from the Board of Medical Officers appointed in Ceylon to report upon the subject, and from the Governor of South Australia, the latter including replies from the Presidents of the South Australian Pharmacy Board, the Medical Board of South Australia, and the South Australian Branch of the British Medical Association. Through the Privy Council Office a report has been received from the India Office of a committee appointed in India to make suggestions in connexion with the subject. In these additional communications some new drugs and a few foreign species of British medicinal plants are proposed; several new preparations are suggested; the omission of what are considered to be useless articles of the Materia Medica and useless components of old preparations is recommended; and a large number of amendments of existing formulæ are included, as well as a few adaptations of formulæ suitable for army and navy purposes. In all these latter amendments, as in the former, local climatic conditions originate a desire for harder ointments and for non-drying extracts. Climate, however, varies so much in the different British possessions that some general permission to vary the proportions of hardening and softening components may have to be received instead of several slightly varying formulæ or any one average formula. We are informed that further replies are under consideration by other Government departments prior to transmission to the General Medical Council.

THE USES OF NITRATE OF SILVER: NITRATE OF SILVER IN PHTHISIS.

Since the introduction of bromides the internal employment of nitrate of silver has been so much discarded that it is somewhat surprising to find it once more recommended in a chronic disease like phthisis, in which, if used at all, it would probably require to be administered for a length of time. The reasons for nitrate of silver, as an internal remedy, having dropped out of fashion are so well known that it is unnecessary to dwell upon them, and we strongly suspect that an increased experience of this drug in phthisis will emphasise the desirability of trusting chiefly to its external actions. But Dr. Crocq of Brussels, who confesses that he has but little belief in the microbic origin of diseases, and who therefore naturally looks upon a great many of the more recent methods of treating phthisis by inhalations and subcutaneous injections of creasote or other antiseptics, as altogether wrong in principle (he says, sometimes even injurious in their results) has reported [1] to the Belgian Academy of Medicine, the result of many years' experience in treating phthisis by nitrate of silver internally. He has convinced himself that it is the drug which has the most real effect on the disease. It acts, according to him, on the digestive tract, increasing the appetite and causing the food to be more readily digested. It also acts on the respiratory apparatus, diminishing the cough, the expectoration, the feeling of oppression, and the sweats. He maintains that the immediate effect of nitrate of silver is to cause contraction of the small vessels, thus diminishing the supply of blood to the tissues, and hence it is useful in epilepsy, chronic cerebral congestion, and various forms of chronic myelitis. It is suggested it acts on the bronchi and lungs in the same manner. It can be suitably combined with opiates, henbane, bitters, and other drugs. The dose is from one-seventh to one-third of a grain during the twenty-four hours. This drug was many years ago proposed as a treatment for phthisis, both pulmonary and laryngeal, but did not meet with much acceptance at the hands of the profession. Dr. Crocq's paper is accompanied by a report of twenty-one cases of tuberculosis in which nitrate of silver appears to have acted very beneficially.

BIBORATE OF SODA IN EPILEPSY.

A recent number of the *Neurologisches Centralblatt* gives an abstract of a second paper on this subject by Dr. Pastena. He regards borax as by no means a radical drug in regard to epilepsy, but as certainly effective in reducing the number of the attacks and also their severity, as well as in modifying the psychical disturbance which accompanies them. It has no

[1] See Le Scalpel, 19 Août, 1894.

bad effects on the circulatory, respiratory, and digestive apparatus. He recommends four grammes a day as a dose to begin with, but much larger doses have, he says, sometimes to be given continuously in order to obtain a successful result. His experience, it will be seen, is similar to that of other observers, although it is generally agreed that one great drawback to borax is the disturbance of the digestive apparatus which large doses produce. Another inconvenience is the great quantity of fluid necessary to dissolve it when a large dose is to be administered.

THE ELECTRIC AURA IN VARICOSE ULCERS.

The effect of static electricity on the healing of certain skin diseases and ulcers has been studied by Professor Doumer[2] of Lille. In the case of ulcers of the leg he has obtained very satisfactory results. The ulcer is first washed with some antiseptic solution, and then covered with a thin layer of absorbent cotton wool. The patient is then placed on an insulating stool and connected with the negative pole of an electrical machine. The positive electrode is now brought near enough to the ulcer to cause the passage of the electrical aura, but not that of any spark. This aura is allowed to play on the part affected for about ten minutes, and cotton wool dressing is then applied. These sittings are repeated twice a week. Where the ulcer is due only to a varicose condition or to a blow, immediate improvement is generally manifested, the pain and itching disappearing very quickly and afterwards the swelling, the ulcer ultimately healing over. Where, in addition to the varicose condition, the patient is greatly debilitated by old age, Bright's disease, or other chronic affection, the action of the electric aura is far less effective. M. Marquant, who has published an account of Professor Doumer's observations, mentions, amongst others, the case of an elderly man who had formerly been given to drink and who had large varices. In consequence of a blow an ulcer appeared on the leg, measuring ultimately 20 millimetres by 17 millimetres; it was insensitive, and secreted a sanious discharge, the surrounding skin being of a violet colour. The tibia was swollen for seven centimetres of its length. Near the centre of the bony swelling, close to the ulcer, there was a fluctuating surface of the size of a two-franc piece, very sensitive to pressure, and here the finger came upon a cup-shaped depression in the inflamed periosteum. This patient was treated for three weeks with antiseptic dressings without any marked change. The electric aura was then resorted to with immediate benefit; the sittings were continued daily, and from the third the pain and swelling decreased. A few days later the size of the ulcer had diminished, the periosteal infiltration had disappeared, and the patient could walk without limping. In three weeks cicatrisation was complete and the ulcer has shown no signs of returning.

THE RESULTS OBTAINED BY DR. VIQUERAT IN HIS TREATMENT OF TUBERCULOSIS.

THE following is a translation of a report on the treatment of tuberculosis by ass's serum, as proposed and carried out by Dr. A. Viquerat of Geneva. The report has been drawn up by an assistant to Professor Jaques Reverdin, Professor of Operative Surgery at Geneva, and, at the present stage of our knowledge, appears to us to be eulogistic to a point a little beyond warrantable conclusions. Dr. Sinclair Coghill, to whom we are indebted for the translation, writes to us as follows:—

"In sending you a translation of a report on Dr. Viquerat's treatment of tuberculosis by ass's serum I should mention that notice of this treatment, in brief and somewhat ambiguous terms, has appeared in more than one lay paper. Dr. Viquerat has been advised that nothing could be more likely to interfere with the proper reception and consideration of his views by the profession, in this country at least, than to permit their announcement in the public journals, and I am sure this is his own opinion. I have also been in communication with other of his *confrères* in Geneva, by whom I am assured that the accounts of his treatment so far are both absolutely trustworthy and full of promise. Nothing is to be more deprecated in such matters than the hasty publication of premature, incomplete investigations. In the present state of our knowledge of the therapeutics of tuberculosis a method based on rational views of its pathogeny and carried out on scientific lines should *a priori* commend itself, and should not only be received without prejudice, but should at once be submitted to the test of ample and deliberate clinical experiment. The fate of Koch's tuberculin must ever be a warning to the profession and public alike of the danger of imperfect observation and hasty generalisation. It is still left to the indefatigable workers in our physiological and pathological laboratories to elucidate and determine, first, why certain animals have a natural immunity to certain toxic or morbific elements; secondly, the mode in which acquired immunity is produced in other animals by toxic infection, natural or artificial; and, thirdly, in what manner the serum of the immunised animal can procure immunity, curative or protective, when introduced into the economy of another, even of a totally different, species. The existence of these three states or conditions is established by most ample and reliable observations and experiment, but the explanation of the *modus operandi* is still wanting, and until this is accomplished the application will remain correspondingly limited. The circumstance that the ass, so far as ascertained, is not only the most refractory of animals to the infection of tubercle, but that its serum attains under certain treatment such active anti-bacillary properties, is most interesting to those who can recall the time when ass's milk enjoyed a universal reputation in the treatment of phthisical affections, which only yielded to the superior claims urged on behalf of cod-liver oil. I know people, now alive and robust, who in youth were dieted extensively on ass's milk for such ailments, and in my own youth I remember that in Scotland there were everywhere, especially in the large towns, dairies for the sale of this commodity, and that, too, in a country where the industrial employment of the ass was almost unknown. I have no doubt the profession will soon be placed in possession of fuller details as to Dr. Viquerat's method. A clinical institute for the reception and treatment of patients by this mode, and in which he will continue his researches, is to be opened on Nov. 1st at Côte-Drize, near Geneva."

THE REPORT.

"We are glad to be able to vouch for the absolute correctness of the statements published by Dr. Viquerat, pupil of Professor Koch, on the subject of the cure of tuberculosis. For a long time we recorded the initial disappointments, and, indeed, the affirmations of Dr. Viquerat found us in the beginning quite sceptical, but these earlier impressions have been entirely removed. He, like many French physicians, at first carried out his researches in serotherapy in the goat and in the dog, and he demonstrated that neither the one nor the other of these two animals, supposed to be refractory to tuberculosis, could resist intravenous, and still less the subcutaneous, inoculation. The dog is even susceptible of contracting tuberculosis in the ordinary manner. Before, however, coming to the treatment properly so called, it is necessary to speak of some theoretical considerations on the nature of tuberculosis. Dr. Viquerat attributes to the microbe of Koch a pathogeny quite different from what has been supposed. This theory is of immense importance in explaining all cases, and among others a certain number of facts hitherto misunderstood. The laboratory researches of Dr. Viquerat have tended to show that the tubercle bacillus has certain special properties: the microbe is essentially aerobic. When living it has the power of producing in the tissues which surround it a considerable arterial hyperæmia, also that of reproduction when in the presence of oxygen, and again the special property of causing caseation. It does not produce toxines, it is not virulent. According to Dr. Viquerat, Koch's bacillus is not by itself deadly. Having no other properties than those above stated, this microbe produces only a local rise of temperature around the tuberculous centre (hyperæmia), but never a general hyperpyrexia. Two forms may present themselves: 1. An acute miliary tuberculosis, producing a considerable hyperæmia with exudation. This exudation compresses and obliterates the venous network, oxygen is supplied abundantly by the arteries, and the exudation may extend so as to produce a fatal result. 2. An ordinary chronic tuberculosis resulting in a secondary infection of streptococci, staphylococci, &c., which produces hectic fever, cachexia, and death, or by a

[2] La Semaine Médicale, 15 Août, 1894.

prolonged suppuration produces an amyloid degeneration of all the parenchymatous organs.

"In the first form Dr. Viquerat opposes to the mechanical nature of the disease a mechanical treatment, which is the puncture of the cavity, with drainage to prevent the compression. Under the influence of the diminution of pressure the venous circulation recovers itself, and the arterial hyperæmia is relieved. The supply of oxygen ceases, and the microbe disappears. This explains the cures obtained incidentally in those cases of acute tuberculous peritonitis by laparotomy, and in a non-caseous white swelling of the knee by a ligature above the joint. The diagnostic value of injections of tuberculin is thus explained; in reality, the dead microbe retaining its hyperæmic property, the tuberculin, which is to some extent an essence of the microbe, a result of its dissolution will reproduce the hyperæmia around the quiescent centres (tuberculous), and consequently a reaction on the part of the organism and a more rapid development of tubercle. For the second form Dr. Viquerat has sought to find an animal refractory both to natural and experimental tuberculosis. The ass is the only animal that has supplied him with what he required. The ass tolerates considerable quantities of tuberculous bouillon injected into the veins as well as subcutaneously. Some days after this injection a granulation presents itself in all its organs—it may be the inception of a tuberculosis; at six weeks, after all this has vanished, the organs are intact, and the microbe has completely disappeared from the body of the animal. The ass, therefore, has the property of preventing the hyperæmia which is developed round the tubercle and arrests the evolution of the tuberculosis. It is from the serum of the ass that Dr. Viquerat has obtained this power, or this anti-tuberculising substance. The experiments made on guinea-pigs have given results very conclusive in this connexion. All of them were cured of their tuberculosis and rendered immune against a new infection by inoculation. One only succumbed. Before the commencement of the treatment the tuberculosis was allowed to develop until the ninth week. The animal died at the end of the eighteenth week, having all the parenchyma of its organs sclerosed, but no longer containing a single tubercle bacillus. With respect to the results obtained in man, there follows the list of twenty-five patients treated by hypodermic injections of ass's serum and presented by Dr. Viquerat at the Conference which was held on Sept. 3rd, 1894.

Case 1 (Pension Mercuriat, Lucens).—Pulmonary tuberculosis (second stage). Cured.

Case 2 (Moulin de Penay).—Pulmonary tuberculosis second and third stage); acute form. Cured.

Case 3 (Villars-Tiercelin).—Examined at the Lausanne Hospital; bilateral tuberculous epididymitis; fistula in scrotum resulting from puncture; fistula closed; swellings diminished one-third and in process of hardening; still under treatment.

Case 4 (Leysin).—Pulmonary tuberculosis (second and third stage); improved; still under treatment.

Case 5 (Orbe).—Pulmonary tuberculosis (second stage); anal fistula cured; still some stethoscopic signs.

Case 6 (Villars-Tiercelin).—Tuberculous pleurisy in 1891; pulmonary tuberculosis (second stage). Cured.

Case 7 (servant at Neyruz).—Pulmonary tuberculosis (first and second stage). Cured.

Case 8 (Villars-Tiercelin).—Cold abscess of femur; operated on; fistulæ. Cured.

Case 9 (Champvent).—Pulmonary tuberculosis (second stage). Cured.

Case 10 (Moudon).—Multiple cold abscesses; osseous tuberculosis; fistulæ; ameliorated; still under treatment.

Case 11 (Ermanche).—Tuberculosis of radius; fistula closed; much suffering; ameliorated; still under treatment.

Case 12 (Lucens).—Tuberculosis of elbow; cold abscess in neck. Cured.

Case 13 (Rossange).—Patient ten years of age; ill since third year; cutaneous tuberculosis of the arm; multiple cold abscesses; tuberculous keratitis, with loss of sight; cured. One eye lost, the other saved.

Case 14 (Henniez-les-Bains).—Tuberculous ganglion of neck. Cured.

Case 15 (Orbe).—Pulmonary tuberculosis (third stage); ameliorated; still under treatment.

Case 16 (Lausanne).—Pulmonary tuberculosis (second and third stage); increase of weight; still under treatment.

Case 17 (La Saraz).—Pulmonary tuberculosis (second stage. Cured.

Case 18 (Davos).—Vesical tuberculosis; gradual disappearance of the bacilli in the urine; cold abscess of the clavicle healed without operation leaving no fistula; still under treatment.

Case 19.—Tuberculous laryngitis; pulmonary tuberculosis (third stage); amelioration in the condition of the larynx.

Case 20.—Tuberculous empyema (?); operated on at Lausanne; resection of three ribs; fistula; suppuration; ameliorated; still under treatment.

Case 21.—Caries of the great toe; disarticulation at Berne; caries; fistula of the first metatarsal bone; cold abscess of the knee. Cured.

Case 22 (Penay).—Pulmonary tuberculosis (first to second stage). Cured.

Case 23 (Chesal).—Pulmonary tuberculosis (second stage); ameliorated; still under treatment.

Case 24.—Pulmonary tuberculosis (third stage); pulmonary gangrene; treatment suspended.

Case 25.—Pulmonary and laryngeal tuberculosis (third stage); suppuration with staphylococci and streptococci; laryngeal syphilis; no amelioration; still under treatment.

"As stated, these results are magnificent, especially if we consider the fact that thirteen—Cases 1, 2, 6, 7, 8, 9, 12, 13, 14, 17, 19, 21, 22—out of the twenty-five have finished their treatment, and that, of these thirteen, twelve are absolutely cured and have resumed their occupations. With respect to the twelve patients who are still under treatment, they all, except Cases 24 and 25, have a good prospect of recovery. In Cases 1, 2, 3, and 8 test inoculations of tuberculin were given.

"Geneva."

CHOLERA.

CURRENT NOTES, COMMENTS, AND CRITICISM.

THE epidemic continues to manifest itself principally in Russia, where cholera still prevails to a considerable extent, although the latest returns show a decided abatement as compared with the figures of the previous week; still there were nearly 6000 cases and 3000 deaths in thirty-six governments of European Russia. According to intelligence from Vienna of the 22nd inst., no cases of cholera had occurred in twelve districts of Galicia since the 11th inst., and only one case in the district of Chrzanow, which had been seriously affected by the epidemic; and the latest returns from Berlin indicate that there is at present extremely little cholera in the German Empire.

The figures published in the official returns from St. Petersburg show the distribution of cholera in Russia, and are as follows: From the 15th to the 21st inst. there were 51 cases and 29 deaths in St. Petersburg, and from the 9th to the 15th inst. 15 cases and 9 deaths in Warsaw. In the governments the figures are as follows: From the 9th to the 15th inst., Petrikov, 305 cases, 106 deaths; Plozk, 40 cases, 31 deaths; Siedlce, 122 cases, 43 deaths; Minsk, 103 cases, 40 deaths; Podolio, 390 cases, 166 deaths; Bessarabia, 310 cases, 113 deaths; Nijni Novgorod, 102 cases, 52 deaths; Jaroslav, 109 cases, 49 deaths. From the 2nd to the 15th, in the Government of Warsaw, 151 cases, 88 deaths; St. Petersburg, 245 cases, 96 deaths; Saratoff, 102 cases, 47 deaths. From the 2nd to the 8th in the government of Kielce, 426 cases, 255 deaths; Kalisch, 37 cases, 24 deaths; Radom, 282 cases, 107 deaths; Courland, 21 cases, 11 deaths; Livonia, 93 cases, 41 deaths; Volhynia, 59 cases, 15 deaths; Grodno, 181 cases, 80 deaths.

Whilst the epidemic has happily been showing signs of declension in Europe, the interest in its study has not diminished. The subject of cholera has naturally been occupying a good deal of attention of late both here and on the Continent. There have been statements and declarations of opinion on the part of scientific authorities and experts of recognised repute at international and national congresses of public hygiene and demography, but we cannot yet be said to have reached a general consensus of opinion in regard to it. Further investigations and protracted observations and experiments are

still needed to clear away difficulties and obscurities before we can formulate conclusions which shall receive general recognition and become the basis of legislative action. Professor Koch, whilst he finds in all his recent observations and experience strong corroborative evidence of the truth of the doctrine that a certain parasite is the cause of cholera, emphatically declared, at the Public Health Congress at Magdeburg, that a great number of secondary causes—local, temporal, and personal conditions—have to come to the aid of such a parasite in order to bring about a case of the disease. He regretfully acknowledges that we know at present comparatively little as to the nature of these, and that we are still confronted by many an obscure and unsolved question. That the disease, however, which had been encountered during the present epidemic in Germany was Asiatic cholera he declared did not admit of any doubt, nor, as far as that country is concerned, that the measures which had been adopted had been efficacious. Experience showed, he said, that it generally took ten years before cholera disappeared from Europe, and he added, according to the report of his speech in the *Times:* "It is more or less a matter of indifference to us what precautionary measures are taken elsewhere if we can protect ourselves at home. I do not attach great value, therefore, to international arrangements. It would be much better if each State would, like Germany, keep the cholera at a distance by learning how to meet its attacks. That would be the best international protection." That Professor Koch has given a new impetus to the study of cholera and thrown a fresh light upon its pathology there can be no doubt. But we may here call attention to a communication (published in another column) from a correspondent who was present at the late Budapest Congress, from which it will be seen how much, in the opinion of other *savants*, we have yet to learn about cholera and its bacteriology.

HYGIENIC IMPROVEMENTS IN THE BAKING AND ALLIED INDUSTRIES.

WHILST it is true that the exhibitions held at the Royal Agricultural Hall from time to time are of a distinctly trade character, yet these exhibitions are frequently found to possess a peculiar interest for the hygienist, since they often afford him an opportunity of reviewing the progress which manufacturers are themselves led to make, not entirely in their own interests, but in the interest of the public well-being. In no other section of trade, perhaps, is the necessity of hygiene so apparent as in the preparation of food in which more particularly bakers and confectioners are engaged. Nor has any branch of industry, especially of late years, aroused so much attention as that of the baking of bread, with the view not so much to improved manufacture as to the improved sanitary condition of the places wherein it is baked. Thus have appeared articles in the lay and scientific press, time after time, on hygiene in the bake-house, underground bakeries, insanitary bakehouses, and so on; but an inquiry of far more reaching importance was that instituted by a Sanitary Commission of THE LANCET[1] which, we venture to believe, produced most salutary results, and the effect of the publication of which in our columns was to stir up the sanitary authorities to a sense of their duty in this matter, and it is cause for congratulation to us and to the public to watch the active steps that are now being taken to improve the sanitary condition of the London bake-house.

At least, such is the conclusion that will impress itself upon the visitor to the Confectioners' and Bakers' Exhibition opened on Monday last at the Royal Agricultural Hall, where he may see models of hygienic bakeries, hygienic ovens, bread and biscuit-making, in the course of which, from first to last, there is little or no contact of the material with human hands, or, what is worse, with effete human products. The most striking and complete exhibit of this character is, perhaps, that of Messrs. Baker and Sons, of 58, City-road, makers of ovens, bread, biscuit, and confectionery machinery. This firm have a large space near the main entrance of the Hall, which is fitted up as a working bakery, containing machinery for the blending and sifting of wheats, prior to the preparation of the dough, which is mixed and kneaded by a most ingenious machine. The cooking of the bread is accomplished in a new "Baker continuous oven," which for cleanliness and for general excellence of appointment will satisfy both hygienic and economic requirements. In the same space are enclosed several working models of confectionery machinery, which for the most part dispense again, as far as possible, with human contact, while at the same time greater safety to the operators is secured. The kneading and mixing machine, which is the patent of Messrs. Perkins and Sons, of 117, Queen Victoria-street, E.C., calls for the admiration of the onlooker for the constructive ingenuity it displays. It performs the work of bread dough-making, for cakes and confectionery also, without any manual assistance. In the same exhibit are the patent steam ovens made by the same firm, which are heated by means of a series of wrought-iron tubes partly filled with water and closed at both ends. One end of each tube projects into the fire, and as the water becomes heated it expands, and fills the tube with steam of an equal temperature. It is a continuous oven, and effects an important economy of fuel and a uniformly cooked product. Portable and military ovens are constructed on the same principle. Improvements in a similar direction are illustrated in the hot air continuous ovens of Mr. Alex. Anderson (Doncaster), which are heated from a furnace by means of a series of flues carrying the heat equally to all parts of the oven, rendering them at all times ready for use. They are said to be smokeless, coke being employed for fuel, to effect an important economy, a uniform heat, and, above all, to be cleanly. The main feature of the heat trap oven of Messrs. Cox and Son of Torquay is sufficiently conveyed by its name, and, while the heat is sharp and uniform, no products of combustion enter the ovens. It is built, so to speak, on the plan of a condenser, so that all the heat is abstracted from the fire and the combustion products. Another example of the chief hygienic improvement in bread-making—namely, in the kneading of dough by machinery—is seen in the kneading machine shown by Messrs. Henry Bath and Son of 53, New Broad-street, E.C., which is claimed to perform the kneading in a short time, to effect the complete dissolution of the yeast, and, accordingly, to produce soft and delicate bread.

In regard to novel food products, there are a great variety which are chiefly instructive of the fact of the gradually increasing preference of the people for whole-meal breads, germ breads, &c., and the wane of the old popular belief that the whiter the bread the better the quality. It is a satisfactory sign of the present day, we think, to find that the demand for germ, whole meal, and other more nutritious and wholesome breads is very steadily growing. Apart from the great waste of food material for which the public have hitherto been responsible through the preference for a perfectly white loaf, which involved the exclusion of valuable food elements, both organic and inorganic, it will, by demanding a loaf that is not virgin white, do much to eradicate a very old and pernicious form of adulteration which their tastes supported—namely, the admixture of alum with flour for bleaching purposes. Of the types represented we need hardly mention the now well-known Hovis flour and bread, since both these preparations formed the subject of report in the Analytical Records of THE LANCET, Nov. 5th, 1892. The improved germ-malt bread of Messrs. W. Marshall and Sons of Grimsby is another excellent example of the strides made in producing a loaf of bread that is palatable, nutritious, that keeps well, and which contains an increased rather than a diminished proportion of those constituents which are credited with muscle and bone-forming properties. The germ bread prepared by Mr. E. T. Brown of Ealing is also an example of bread made with similar objects in view. A "new digestive bread" is shown by Mr. J. Clapp of 90, Bishopsgate-street, which claims advantages chiefly in the direction of digestibility and increased nutritive powers.

There is one class of exhibits which should claim the

[1] Report of THE LANCET Special Sanitary Commission on Bakeries and Bread-making, THE LANCET, Nov. 30th, 1889.

attention of all those interested in dietetics and should also be of interest to the analyst. We refer to certain food substitutes. "Nucoline," for example, is described as a pure vegetable butter suitable for baking and culinary purposes, and is expressed from sweet nuts. It is cheaper than margarine, lard, &c., and while it contains no cotton oil, yet is said to make pastry, cakes, &c., as light as though made with the finest butter. This is doubtless true, but it would be more satisfactory if some evidence were deduced of its real food value compared with butter; it is a satisfactory cooking substitute, but is it equally so as a food substitute? "Nucoline," which is derived from cocoa-nut oil, is manufactured by the New Oils Co., Limited, Silvertown. A related preparation is Cottolene, the name of which may be taken to indicate that it is made from cotton oil. It is a pale yellow material of the consistency, texture, and substance of butter, and is said to effect a saving of 33 per cent. in the quantity used as against butter or margarine, with cooking results equal in every respect. Here again it is assumed that butter is used in pastry merely to impart a desirable texture or firmness to the cooked product, whereas it exists as an important food constituent, the substitution for which of cotton oil or other oil may, in the absence of any evidence to the contrary, seriously affect the real food value. Cottolene is prepared by Messrs. Bigland, Sons, and Jeffreys, of Liverpool. A better known butter substitute is margarine, which is undoubtedly wholesome. Margarine pure and mixed, as well as genuine butters, were well represented in the exhibits of such firms as Messrs. Fitch and Son of 15, Wormwood-street, E.; Messrs. W. W. Smith and Sons, 82, Crawford-street, W.; Messrs. Mentz, Coopman, and Chidley, Limited, 48, St. John-street, West Smithfield (Danish butters &c., manufactured by Leo Andriesse); Messrs. Redding and Jones, 16, Water-lane, E.C.

Of digestive preparations used in the making of bread, that offered by the Peptine Maltine Company of Leicester is worthy of mention. Peptine maltine consists of malt extract peptonised, and is said to cause a vigorous and healthy fermentation, producing a decided softening effect on gluten and, of course, exciting a distinct solvent action of starch.

Lastly, pure jams and confectionery were admirably represented in the really excellent display of Messrs. Batger and Co., of Ratcliff, London; while a high-class order of sweetmeats, chocolates, fondants, &c. was exhibited by Messrs. Hildebrand and Son, of Berlin, who have an agency in London at 115, Strand. It is satisfactory to learn that, in spite of the manifold and oftentimes brilliant colours used in this class of preparation, that only pure vegetable dyes are employed in the products of this firm, the colouring of foods being a subject of special legislation in Germany.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 5835 births and 3155 deaths were registered during the week ending Sept. 22nd. The annual rate of mortality in these towns, which had increased in the preceding three weeks from 15·2 to 15·9 per 1000, declined again last week to 15·7. In London the rate was 14·5 per 1000, while it averaged 16·6 in the thirty-two provincial towns. The lowest rates in these towns were 6·2 in Halifax, 11·2 in Nottingham, 11·9 in Burnley, 12·5 in Plymouth, and 12·8 in Gateshead; the highest rates were 19·2 in Manchester, 19·6 in Newcastle-upon-Tyne, 19·8 in Salford, 20·2 in Wolverhampton, and 23·5 in Liverpool. The 3155 deaths included 415 which were referred to the principal zymotic diseases, against 485 and 467 in the preceding two weeks; of these, 163 resulted from diarrhœa, 76 from diphtheria, 58 from whooping-cough, 44 from "fever" (principally enteric), 39 from measles, 32 from scarlet fever, and 3 from small-pox. No fatal case of any of these diseases occurred last week in Derby or in Halifax; in the other towns they caused the lowest death-rates in Oldham, Bradford, and Birkenhead; and the highest rates in Salford, Newcastle-upon-Tyne, Portsmouth, and Wolverhampton. The greatest mortality from whooping-cough occurred in Swansea; and from diarrhœa in Preston, Newcastle-upon-Tyne, Plymouth, and Portsmouth. The mortality from measles, scarlet fever, and "fever" showed no marked excess in any of the large towns. The 76 deaths from diphtheria included 52 in London, 6 in West Ham, and 2 each in Bristol, Cardiff, Salford, and Sheffield. Two fatal cases of small-pox were registered in Birmingham, and 1 in Wolverhampton, but not one in London or in any other of the thirty-three towns. There were 100 cases of small-pox under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, the 22nd inst., against 163, 129, and 109 at the end of the preceding three weeks; 23 new cases were admitted during the week, against 40, 13, and 19 in the preceding three weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2060, against 2112, 2026, and 2079 on the preceding three Saturdays; 258 new cases were admitted during the week, against 212 and 269 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had risen from 123 to 143 in the preceding three weeks, further increased to 172 last week, but were 5 below the corrected average. The causes of 48, or 1·5 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Leicester, Nottingham, Bradford, Newcastle-upon-Tyne, and in twelve other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Birmingham, Liverpool, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 15·6 and 15·5 per 1000 in the preceding two weeks, further fell to 14·9 during the week ending Sept. 22nd, and was 0·8 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 9·5 in Aberdeen and 12·8 in Dundee to 19·5 in Leith and 20·7 in Paisley. The 426 deaths in these towns included 19 which were referred to diarrhœa, 12 to diphtheria, 10 to whooping-cough, 6 to "fever," 4 to scarlet fever, 2 to measles, and not one to small-pox. In all, 53 deaths resulted from these principal zymotic diseases, against 64 and 63 in the preceding two weeks. These 53 deaths were equal to an annual rate of 1·9 per 1000, which was slightly below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had increased from 17 to 23 in the preceding three weeks, declined again to 19 last week, of which 8 occurred in Glasgow. The deaths referred to diphtheria, which had been 11 and 10 in the preceding two weeks, rose again to 12 last week, and included 9 in Glasgow and 2 in Edinburgh. The 10 fatal cases of whooping-cough exceeded by 5 the number in the preceding week, and included 7 in Glasgow. The deaths referred to different forms of "fever," which had been 9 and 5 in the preceding two weeks, were 6 last week, of which 3 occurred in Glasgow. The 4 fatal cases of scarlet fever showed a marked decline from the numbers recorded in recent weeks, and included 3 in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 52 and 67 in the preceding two weeks, further rose to 74 last week, and corresponded with the number in the same week of last year. The causes of 35, or more than 8 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 26·1 and 21·8 per 1000 in the preceding two weeks, further declined to 20·4 during the week ending Sept. 22nd. During the past twelve weeks of the current quarter the death-rate in the city has averaged 20·8 per 1000, against 16·0 in London and 15·0 in Edinburgh. The 137 deaths registered in Dublin during the week under notice showed a decline of 9 from the number in the previous week, and included 16 which were referred to the principal zymotic diseases, against 19 and 15 in the preceding two weeks; of these, 7 resulted from "fever" (principally enteric), 6 from diarrhœa, 2 from whooping-cough, 1 from scarlet fever, and not one either from small-pox, measles, or diphtheria. These 16 deaths were equal to an annual rate of 2·4 per 1000, the zymotic death-rate during the same period being 1·9 in London and 0·8 in Edinburgh. The deaths referred to different forms of "fever," which had been 4, 5, and 2 in the preceding three weeks, rose to 7 last week, a higher number than in any week since December

last. The fatal cases of diarrhœa, which had been 8 in each of the preceding two weeks, declined to 6 last week. The 137 deaths in Dublin last week included 31 of infants under one year of age, and 34 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons exceeded those recorded in the preceding week. Four inquest cases and 4 deaths from violence were registered; and 52, or more than a third, of the deaths occurred in public institutions. The causes of 16, or nearly 12 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF SOUTH AUSTRALIA.

From the recently issued annual report of the Registrar-General of South Australia, dealing with the marriages, births, and deaths during 1893, it appears that the vital statistics of that colony during that period do not compare very favourably with those in recent years. The marriage-rate in 1893 was equal to 12·5 per 1000 of the population, against 14·7 in England and Wales during the same period, and was the lowest rate recorded in any of the preceding twenty years. The birth-rate was equal to 31·8 per 1000, and was the lowest recorded during the past thirty years. The death-rate, which had been 12·6, 13·3, and 11·4 per 1000 in the preceding three years, 1890–1–2, was 13·4 during 1893, and was higher than in any the past seven years. Although this increased death-rate is still considerably below that recorded in England, it must be borne in mind that the age and sex distribution of South Australia, as compared with that in England, is decidedly favourable to the former; and also that only about one-third of the population of the colony is urban, and the remaining two-thirds rural, the exact reverse being the case in England. The death-rate of South Australia has during recent years shown a considerable improvement; for while it was usually from 15 to 16 per 1000 for many years prior to 1884, the of sanitary improvements became apparent and the death-rate since 1884 has averaged only 12·7 per 1000. In Adelaide, with a population estimated at rather less than 40 000, the birth-rate during 1893 was equal to 30·1, and the death-rate to 24·9 per 1000, the latter being in excess of that recorded in any other colonial town for which statistics are published. With regard to the mortality from zymotic diseases in the colony during the past year, although the deaths from measles and from whooping-cough were excessive during 1893, it is satisfactory to note that the death-rate from typhoid fever was considerably below that recorded in any preceding year, and was only one-half the average of the past twelve years. Infant mortality in South Australia, as might be expected, is always considerably lower than in England; in 1893 the deaths of children under one year of age were equal to a rate of 117 per 1000 registered births, which, although it exceeded the average of recent years, was much below the lowest rate ever recorded in England.

THE SERVICES.

MOVEMENTS OF THE MEDICAL STAFF.

SURGEON-CAPTAIN PINCHING, lately attached to the Egyptian Army, has been transferred to the Egyptian Sanitary Department. Brigade-Surgeon-Lieutenant-Colonel Fraser has relieved Brigade-Surgeon-Lieutenant-Colonel Clapp as Senior Medical Officer in the Mauritius, and Surgeon-Captains Fallon, Colledge, and Butterworth have arrived there on a tour of service. Surgeon-Lieutenant-Colonel O'Reilly has embarked for India in the *Victoria*. Surgeon-Major James has arrived in England from Malta on leave of absence, and Surgeon-Lieutenant Taylor has been transferred to Shorncliffe.

ARMY MEDICAL STAFF.

Brigade-Surgeon-Lieutenant-Colonel James Macartney, M.D., is placed on temporary half-pay on account of ill-health.—1st Life Guards: Surgeon-Captain Seton Guthrie Hamilton retires from the Service, receiving a gratuity. Surgeon-Major Horatio R. O. Cross, from Scots Guards, to be Surgeon-Captain, vice S. G. Hamilton, his rank of Surgeon-Major being cancelled.

THE INDIAN MEDICAL SERVICES.

The services of Surgeon-Major K. R. Kirtikar, Civil Surgeon, Thana, are placed at the disposal of the Bombay Municipality with a view to his appointment to act as Executive Health Officer of the Municipality, vice Surgeon-Lieutenant-Colonel T. S. Weir appointed to act as Municipal Commissioner for the City of Bombay. Surgeon-Major C. B. Hunter, I.M.S. (Bengal), whose services have been placed temporarily at the disposal of the Chief Commissioner, Central Provinces, is appointed to be a Civil Surgeon and is posted to the Seoni district. Surgeon-Captain W. L. Price, M.B., Civil Surgeon, Chhindwara, is placed temporarily in Medical Charge of the Seoni district in addition to his own duties. Surgeon-Captain C. E. G. Stalkartt, M.D., who is at present on general duty in the Bombay district, has been transferred to the Sind district. The Queen's approval to the following promotion in the Madras Medical Establishment is gazetted:—To be Brigade-Surgeon-Lieutenant-Colonel: Surgeon-Lieutenant-Colonel Edward Fawcett (dated April 4th, 1894). The Queen has also approved of the transfer from the Half-pay List to the Retired List of Surgeon-Captain William Wilfrid Webb, Bengal Medical Establishment (dated Aug. 22nd, 1894).

NAVAL MEDICAL SERVICE.

The following appointments are notified:—Staff-Surgeon E. G. Swan, to the *Briton*. Surgeons: H. J. Hadden, M.B., to Bermuda Hospital; A. G. W. Bowen, M.B., to the *Partridge*; G. T. Bishop, to the *Linnet*; R. D. Jameson, to the *Galatea*; Robert S. Barnard, to the *Victory*, additional, to be lent to the *Minotaur*, temporarily; and James Mowatt, to the *Edinburgh*.

VOLUNTEER CORPS.

Rifle: 1st (Cumberland) Volunteer Battalion, the Border Regiment: Surgeon-Lieutenant W. Symington, M.B., to be Surgeon-Captain.—3rd Volunteer Battalion, the Essex Regiment: Surgeon-Lieutenant C. W. Bass is superseded for absence without leave.

VOLUNTEER OFFICERS' DECORATION.

This decoration has been conferred upon the following officers: *Western District: Royal Engineers:* 1st Gloucestershire: Surgeon-Lieutenant-Colonel Samuel Smith and Surgeon-Lieutenant-Colonel Douglas J. Dutton.—*Thames District: Artillery:* 2nd Kent: Surgeon-Major Frank Smith, M.D.—*Home District: Rifle:* 1st Volunteer Battalion, the Royal Fusiliers (City of London Regiment): Brigade-Surgeon-Lieutenant-Colonel Samuel Parsons Smith.—*Scottish District: Artillery:* 1st Midlothian: Surgeon-Lieutenant-Colonel Peter Alexander Young, M.D.

DEATHS IN THE SERVICES.

Brigade-Surgeon Hamilton Mitchell, who died on the 26th of August last at Derry, after a short illness, became assistant surgeon in 1854, surgeon in 1867, and was placed on half-pay in 1880. He served in the Crimea from November, 1854, to February, 1855, receiving the medal with clasp for Sebastopol, and Turkish medal.—Surgeon George McShane, R.N., of the *Linnet*, son of Inspector-General McShane, R.N., recently died at Chefoo, China, aged thirty-one years.

FIRST AID IN INDIA.

The Ambulance Squad of the Poona Volunteers, under the command of Surgeon-Major C. J. Addison, A.M.S., was inspected on Thursday, Aug. 30th, by his Excellency Lieutenant-General Nairne. The Red Cross operations were conducted under circumstances approaching as near as possible those likely to occur in actual warfare, and the whole of the proceedings were carried out with great success.

In consequence of the reduction of the British garrison in Cyprus only one medical officer will be retained for duty in the island, the medical staff being distributed between Egypt, Malta, and Home. Surgeon-Major Kenny is the officer who will remain.

Correspondence.

"Audi alteram partem."

THE NATURE AND CAUSES OF CHOLERA.

To the Editors of THE LANCET.

SIRS,—Adverting to your article on Cholera in THE LANCET of the 22nd inst., which I read with great interest, I desire, with your permission, and guided by the light of what I heard and understood from the discussion of this subject at Budapest, to make a few remarks thereon. The discussion on cholera at the recent Congress took place on the 5th inst.

at a joint meeting of the first three Sections, under the presidency of Professor Koranyi and of myself. Some of the highest authorities in bacteriology explained on that occasion the result of their studies before a crowded and attentive audience. I desire at the outset to guard against being supposed to possess any special knowledge of bacteriolcgy. To such knowledge I lay no claim. I merely wish to place on record what I heard at Budapest in connexion with a subject which necessarily engaged much of my thought and time during my long service in India. Professor Grüber of Vienna gave his audience to understand that "the bacteria as such are innocuous (*ungiftig*)—they become toxic only under certain circumstances; that there is no known specific poison of cholera; and that Koch's theories are for diagnosis worthless." Professor Hügge of Prague expressed similar views. Metchnikoff stated that man may swallow considerable quantities of cholera vibrios "*sans prendre le choléra.*" He declares that the presence of cholera bacilli in the stools of healthy persons is not at all an uncommon occurrence, and quotes the experiments of Dr. Wall, who, when at Budapest during a former epidemic, had on four different occasions swallowed large quantities of cholera vibrios without injury. Metchnikoff goes further, and observes that his assistants, Blachstein and Sanarelli, discovered the cholera vibrio in the River Seine near the Pont Neuf in Paris, and also at St. Cloud and Versailles, although it is well known that Versailles had never been visited by a cholera epidemic notwithstanding that it stands in need of much in respect to sanitation. Its water-supply comes from the river Seine after passing by Paris and its suburbs, where cholera was frequently raging; the water flowed into the town through a long aqueduct, and was often so "offensive and disgusting" that persons using it have been unceasing in their complaints. Nevertheless, Versailles remained free from cholera epidemics. Why, then, did the cholera vibrio discovered in the Seine by Sanarelli produce no cholera at Versailles? The answer, according to Metchnikoff, is this: that of late many micro-organisms entirely resembling Koch's bacillus have been described, and the diagnosis of the true cholera bacillus, therefore, has become extremely difficult. The rules also which Koch laid down in 1884—nay, even those of 1893—are no longer applicable to our knowledge of to-day. "That is the reason," continues Metchnikoff, "that in the best bacteriological laboratories, including that of Koch himself, micro-organisms had to be declared as choleragenetic which were not so considered before, and *vice versâ*."

Metchnikoff likewise states that he tried what may be called crucial experiments upon his own person, and amused his audience by mentioning "*toutes les cochonneries*" which he had swallowed. He did not enter into further details beyond remarking that on some occasions he suffered from a passing diarrhœa, but no other harm came to him. Metchnikoff distinguishes *inhibitive* and *adjuvant* vibrios; to the latter category belong the sarcina, bacillus coliformis, and the torula, and these are said to favour the production of the toxic element of cholera; but he adds that there is still something very special and "*mystérieux*" in the matter, requiring further study.

Nobody appeared to take up the discussion on the other side.

May I quote one more remark from Metchnikoff? "At one time it was supposed that the cholera vibrio was an exotic plant, hardly adapted to live in our climes. Numerous facts have proved that this hypothesis was untenable. The cholera vibrio adapts itself to the conditions of life under circumstances very different from those of the Gangetic delta, and in our latitudes it can exist for a long time."[1]

It is to be regretted that the English and Indian Governments were not officially represented at the Congress of Budapest, for the scientific discussion on cholera was of supreme interest to them. As to the real nature and cause of cholera the most earnest investigators tell us that we have not yet attained the goal. There is still something very "special and mysterious" about the subject, requiring much further study and investigation.

I am, Sirs, yours truly,

THEODORE DUKA,
Late President of the Tropical Section at the Hygienic and Demographic Congress of Budapest.

Nevern-square, S.W., Sept. 25th, 1894.

[1] Annales de l'Institut Pasteur, Août, 1894, p. 586.

MEDICAL ETHICS.

To the Editors of THE LANCET.

SIRS,—I was under the impression that the medical editor of the daily or weekly paper was a thing of the past, and that it was not in accordance with professional usage for a registered medical practitioner to answer correspondents as to their ailments through the public press. Twenty years ago some weeklies seemed to have a medical editor for the purpose, but I think the medical Press and professional opinion caused it to cease, and I was under the impression that this form of advertising was relegated to obscurity. In the provinces this is so. Fancy my astonishment, however, on perusing a London evening daily paper to find that one Arthur A. Beale, M.B., had taken to this form of practice, and this under the very noses of the "light and leading" of the profession in the metropolis. I enclose you the cutting from the *Echo* so that you may see that it is an established practice. Trusting that timely admonition from you may put a stop to a further breach of professional rules,

I am, Sirs, yours faithfully,

Wigan, Sept. 22nd, 1894. WM. BERRY, F.R.C.S.I.

WANTED SCIENTIFIC ASSISTANTS.

To the Editors of THE LANCET.

SIRS,—It seems strange that in these days of progress a valuable branch of medical practice should remain unexploited, and that we should still be without the special scientific assistant. I do not mean that he should be attached to one practitioner, but to many, general and special, in certain districts. Such a man would be, for a suitable fee, open to engagement by medical men who desired his services. He would be a competent physiologist, chemist, bacteriologist, &c., and would, when required, visit any particular case, draw up a full report on it, analyse and microscope specimens of tissues and secretions, and tabulate facts which neither practitioner nor consultant have time to estimate. He would, in short, reckon up the case from time to time and preserve an enormous mass of material which is now lost, to the disaster of patients and the misfortune of science. It would not be difficult to prevent the abuse of such a scheme, but it would be impossible to overestimate the value of such assistance to the busy practitioner who is too busy to get a real insight into his cases, and who thus loses the keen interest in them which he would otherwise have. Certainly, the standards of practice would be enormously raised; we should realise the responsibility of ignoring modern methods which are revolutionising medicine, the work of the busiest amongst us would become in the best sense educational, and brilliant men who are now turned out of our schools without practices to go to and with no sphere for the exercise of their elaborate training, would be given congenial work which would be, at reasonable fees, sufficiently remunerative. To have our patients reckoned up for us at crises of diseases would afford a series of valuable lessons and must result in advantage all round. I confess the idea fascinates me. When I was absorbed in general practice, I frequently felt the want of such assistance, and to do the work myself was out of the question, except at great sacrifice of time and the complete sacrifice of leisure, which came too rarely. But without this work one's practice was valueless as regards its educational benefit to oneself, and the interesting cases had a trick of coming when one was far too busy to do anything but give them any but the most casual attention, if it might be called attention at all. Like myself, most men have these cases, and they are a source of infinite regret to them and not unfrequently of discredit. I throw out the suggestions of this letter, crude as they are, with the hope that they may commend themselves to you and your readers, and that an occasion may arise for amplifying them.

I am, Sirs, yours obediently,

G. A. HAWKINS-AMBLER, F.R.C.S.Eng.

Liverpool, Sept. 24th, 1894.

"UNUSUAL CASE OF SCARLET FEVER."

To the Editors of THE LANCET.

SIRS,—In reference to the above case, which is said by Dr. Clement Dukes to be a characteristic one of epidemic roseola, I should like to mention that my diagnosis was based

chiefly on the presence of albuminuria and the free desquamation of the hands and feet. My authority was Dr. Squire, who, writing on rubella in Quain's Dictionary of Medicine, 1886, says: "(1) There is no albuminuria, nor has this ever been known to follow. (2) It is not followed by desquamation." Dr. Frederick Taylor, in his Practice of Medicine, states that desquamation is commonly absent, and it is never in large flakes. Unfortunately, I have not as yet received the paper on the "Features which distinguish Epidemic Roseola from Scarlet Fever" which Dr. Dukes has kindly recommended me to read, but I have carefully perused his interesting abstract on the subject in THE LANCET, March 31st, which I had not previously seen. From it I learn that desquamation may be as complete as possible, even extending to a general desquamation of the hands and feet. As regards albuminuria I find that authorities differ widely. Dr. Dukes states the kidneys are rarely affected in epidemic roseola, whereas Dr. Edwards, in Keating's Cyclopædia of the Diseases of Children, mentions that his first 166 cases presented slight albuminuria in 30 per cent., but the next 100 cases showed only 3 per cent. albuminous urine. He states also that Hardaway considers it an anomalous symptom giving rise to a doubt in the diagnosis, and that Mettenheimer and Tonge-Smith have never observed it. Should it be necessary, he says, to diagnose a single individual and isolated case of rubella, we must admit that some difficulty would be encountered, and that we have no diagnostic guide that might be considered positive, pathognomonic, or characteristic, but that we are constrained to rely upon the *tout ensemble*.

In conclusion, therefore, if we admit that albuminuria and free desquamation occasionally follow rubella, I should infer that all cases which have not the characteristic strawberry tongue and high temperature must be classed as rubella. The latter term, as suggested by Dr. Donkin, is much to be preferred, especially when we meet isolated cases.

I am, Sirs, yours faithfully,

P. J. F. KAVANAGH.

Queen's-gardens, Lancaster-gate, W., Sept. 24th, 1894.

RESULTS OF HOSPITAL AND HOME ISOLATION OF SCARLET FEVER CASES.

To the Editors of THE LANCET.

SIRS,—Will you allow me to point out that Dr. Boobbyer, in THE LANCET of Sept. 22nd, p. 706, has inadvertently made the total death-rate per case slightly too low in those treated in hospitals at Nottingham, and considerably too high in those treated at home? The former he gives as 3·7, the latter as 9·7; but as (in all) there were 1065 cases treated in hospitals and 40 deaths, I make the death-rate per case at hospital 3·7558; and this, by all the rules of statistics, should, if reduced to one decimal place, be rendered 3·8; and as (in all) he had notified to him as treated at home 446 cases and 40 deaths, I make the death-rate at home per notified case 8·9686, which reduced becomes 9·0. These may be considered trifling errors, but they happen to be on the wrong side, and in statistics accuracy is a virtue. In view of the figures as revised one would like to know how many of the cases removed to hospital were cases in reality of desquamating rötheln and how many cases of scarlet fever treated at home were unnotified. We have had crowds of the former in this neighbourhood, and I am given to understand Nottingham is not without the latter.

I am, Sirs, yours faithfully,

Kingston-on-Thames, Sept. 24th, 1894. D. BIDDLE.

P.S.—It may be needless, but is perhaps expedient, to remark that the above rates are percentages.

"EPILEPTIFORM FITS IN CARDIAC DISEASE."

To the Editors of THE LANCET.

SIRS,—Although not of the same nature as the cases mentioned in the address of Dr. Bristowe published in THE LANCET of Sept. 22nd, a brief reference to two instances of epileptiform fits in cases of heart disease may be of interest. The first example was seen three years ago at the St. Saviour's Union Infirmary, East Dulwich. It was in a woman aged about thirty-five, who had been admitted to the infirmary from time to time for mitral stenosis. One afternoon she was suddenly seized with an epileptiform fit of so severe a character that the face and forehead became covered with small petechiæ. A short period of coma followed, but in the course of an hour or so she returned to her ordinary mental state. There were no signs that pointed to any local lesion the result of embolus; the pupils were equal, and there was no paresis of any limb. Nor was there any history of epilepsy; at no previous time in her life had she had fits of any kind. Another interesting case occurred under the care of Dr. Wheaton in the Royal Hospital for Children and Women, Waterloo-road, S.E. It was that of a woman aged thirty-nine, also the subject of mitral stenosis. On admission her pulse was slightly irregular, 88 to the minute, and during the course of the first week it slowed down to 52. Ten days after admission the house surgeon, Mr. Thorne, was called to see her. He found her in a semi-conscious state, breathing stertorously with an irregular feeble pulse that soon became imperceptible. Twitchings of the facial muscles occurred; there was some movement of the left arm and, shortly after, general rigidity. Respiration ceased, and the pulse still could not be felt. Clonic convulsions terminating in coma followed. During the comatose stage "the pulse became perceptible and comparatively strong." The breathing was stertorous. "About an hour after, speech returned, but was rambling." On the following day she was still semi-conscious, the pulse irregular and only just perceptible, and the respiration laboured and noisy. Death took place twenty-three hours after the onset, the temperature rising from 98° to 106° F. At the necropsy well-marked mitral stenosis was found, but careful search failed to discover any embolus in the cerebral arteries. There were no signs of thrombosis in the left auricle or ventricle that might have formed the starting-point of an embolus; the kidney, however, although not diminished in size, presented some granular change. There were a few small cysts, and the cortex peeled badly. The presence of kidney disease suggests uræmia, but the rise of temperature that occurred would be very remarkable in a uræmic fit, and the failure of the pulse noted would favour the view of circulatory disturbance as the cause of the attack. The urine was scanty—from twenty to twenty-five ounces in the twenty-four hours; but from diminution in the quantity of urine one can argue either in favour of cardiac failure or of uræmic intoxication as a cause, since both these attacks occurred in patients the subjects of mitral stenosis. A reference of Dr. Sansom to fits in children suffering from the same form of valve disease is of interest. He mentions four instances; one in a girl ended fatally, but no mention is made of an embolus having been found.[1] At the end of his address Dr. Bristowe refers to a case in which unconsciousness and slight convulsive movements were associated with cerebral congestion due to severe cough. Unconsciousness without convulsive movements is, I believe that I am right in saying, not so very uncommon in the subjects of chronic bronchitis during attacks of severe cough; at least, I have met with two or three instances in which such a history has been given, the example that has left the deepest impression upon my mind being in a man among the Guy's Hospital medical out-patients, who, with an expression of mixed astonishment and alarm, graphically described how he would sometimes fall unconscious in the street when the cough seized him. Delirium is another form of cerebral disturbance sometimes present in cardiac cases that might be associated with the above. Like epileptiform fits, delirium may have its origin in organic brain disease or be due to the action of toxines upon the central nervous system; but it apparently may also be produced by defective circulation, the most obvious feature of such defect being, so far as one can judge from one's own experience, marked cardiac irregularity. But irregular pulse is common without delirium, and severe cough without attacks of loss of consciousness. Nor can slowness of the pulse be a frequent cause of epileptiform fits, since brachycardia is not so very infrequent after pneumonia and some fevers. There must be another factor present—viz., an abnormal instability of the central nervous system. Such instability, if not hereditary, may possibly be acquired as the consequence of malnutrition dependent upon defective circulation.

I am, Sirs, yours faithfully,

THEODORE FISHER.

Pembroke-road, Clifton, Bristol, Sept. 25th, 1894.

[1] Keating's Cyclopædia of Diseases of Children, vol. ii., part ii., p. 332.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Hospital Sunday Fund.

AT the twenty-first annual meeting of the Newcastle Hospital Sunday Fund, under the presidency of the Mayor, the report announced a falling off in each of the funds in the collections for last year, the decrease in places of worship being £166 11*s.* 4*d.*, in factories, shipyards, &c., £139 0*s.* 3*d.*, and in the special contributions £18 10*s.* 2*d.*, or a total decrease of £324 1*s.* 9*d.* The decrease in the works collections could be fully accounted for by the growing action in the factories of sending their contributions direct to the infirmary and other local hospitals, instead of, as formerly, through this fund. The falling off in the collections in the churches and chapels, however, was not so easily explained. Still, over £4000 in the aggregate was collected. The total amount collected to date—i.e., 1870 to 1893, inclusive—was £85,596 10*s.* 6*d.*

Diarrhœa in Newcastle.

The report by Dr. Armstrong, medical officer of health for the city, shows that there has been an unusual amount of diarrhœa in Newcastle of late. It was the most prevalent disease during the fortnight ending Sept. 8th, 101 cases having been reported.

Tribute to a Durham Prison Surgeon.

At the conclusion of an inquest at Her Majesty's Prison, Durham, reference was made to the approaching departure of Mr. Treadwell, prison surgeon, who is about to remove to the new convict prison at Dover. The foreman (Councillor W. Thwaites), on behalf of the jury, expressed regret at the departure of Mr. Treadwell and spoke of the great kindness always manifested by that gentleman to the prisoners who came under his care. The coroner fully endorsed all that had been said.

The Camp for Poor Boys.

The camp on Hartley Links, near Blyth, was struck on Saturday, having been open since May 7th. During that period 243 of the "street arabs" of Newcastle and Gateshead have had the benefit of a fortnight's holiday. Cold wet weather predominated during the summer, but the committee record another season free from sickness and a storing up of health by the boys.

Hospital Demonstration at Saltburn-by-the-Sea.

The committee desire to render their sincere thanks to the lifeboat crew, members of the rocket brigade, benefit societies, and all who so generously assisted in making the demonstration of Sept. 2nd such a complete success. From the amounts collected on that day (£17 18*s.*) the committee awarded £8 to the hospital at Brotton and £7 to the cottage hospital at North Ormesby.

Harrogate.

At a late meeting of the Heatherdene Convalescent Home one of the workmen's governors handed to Mr. Stansfield Richardson (chairman of the committee) a cheque for 100 guineas as the result of the workmen's demonstration. The number of water drinkers at the Royal Pump Room one day lately was 1001.

Newcastle-on-Tyne, Sept. 26th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

The New Mater Infirmorum Hospital, Belfast.

A MEETING in aid of the new Mater Infirmorum Hospital was held, under the presidency of the Roman Catholic Bishop of Down, on Sept. 24th. The Bishop, having given a sketch of the origin and growth of the present hospital, explained that, owing to urgent want of accommodation, they had decided to build a new hospital, and he had fortunately secured a site adjoining the present hospital in one of the most healthful situations in the whole city. The meeting unanimously passed a resolution approving of the building of the new hospital and pledging themselves to give the undertaking their heartiest support. The new hospital, which will cost £20,000, will have a frontage of 230 feet on the Crumlin road, will cover an area of one acre, and will be built on the "pavilion" system, and will consist of three blocks, the centre one for administration, the others for the patients. It is planned for 137 beds and eight cots for children. The centre block will contain reception-rooms, offices, and rooms for resident medical officers, and behind it will be the chapel. Ample extern rooms are to be provided, and the entire building, which will be of red brickwork and stone dressings, will be heated by steam and lighted by electricity, and will contain every modern hospital improvement. This new hospital will be of great advantage to the city of Belfast.

Scarlet Fever in Lisburn.

At the suggestion of Mr. Jefferson, the medical officer of health, all the local national schools with one exception have been closed for a month owing to the outbreak of scarlet fever in the district.

The Gilchrist Lectures.

The first of the Gilchrist lectures, to be delivered in the north of Ireland, was given by Professor Lewes of the Royal Naval College on Sept. 24th, in Newry, on Our Atmosphere and its Relation to Life. The large hall, which is capable of holding 1100 persons, was crowded to excess.

Sept. 25th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Carpets as Carriers of Infection.

THE origin of specific fevers is, in individual instances, frequently a mystery. It appears that those vast emporia, duboed *magasins de nouveautés*, which enjoy an ever-increasing popularity, may constitute dangerous foci of zymotic infection, and that the source of this may be traced to the far East. There are, in fact, good grounds for suspicion against the picturesquely gaudy carpets manufactured by the natives which are nowadays so extensively purchased. Could the buyers visit the unventilated dens in which the articles are woven by individuals whose notions of hygiene are of the crudest, they would hesitate before admitting them into their houses. I understand that several outbreaks of fever traced to this cause in Paris, having been recently reported to the Conseil d'Hygiène, that body intends in future to take measures at the frontier calculated to counteract this danger. I may mention in this connexion the instructive results (reported in a recent thesis) of the bacteriological examination by Dr. Trouskoliawski of ward literature, such as books lent to patients, report sheets, admission cards, certificates, &c. He discovered on forty-six sheets an average of forty-three microbes per square centimetre. The micro-organisms detected comprised specimens of Koch's tuberculosis bacillus, the streptococcus, and the bacillus pyocyaneus. He further proved that on dry and previously sterilised paper the virulence of the cholera bacillus was maintained for a period varying from five to fourteen days, and that the corresponding periods for the typhoid (Eberth's) bacillus, the diphtheria bacillus, and the streptococcus were sixty-three, thirty-eight, and ninety-eight days respectively.

The Treatment of Asystole.

In a clinical lecture on the above condition, which would, by the way, be more appropriately denominated dyssystole, Dr. Huchard protested against the tendency of physicians to defer therapeutic intervention until a late period of heart failure, when, owing to degeneration of the myocardium, drugs lose their power. On the contrary, he urges the advisability of early medication with digitalis, the indications for which are (1) enfeeblement of cardiac pulsations; (2) lowering of arterial and rise of venous tension; (3) scarcity of urine, with peripheral œdema and visceral congestion. But he never waits for proof of congestion of the viscera, but administers digitalis as soon as he observes parimalleolar, or rather pretibial, œdema in the evening. Before beginning the digitalis, Dr. Huchard keeps his patient in bed and on partial or exclusive milk diet for a few days. On the second or third day he gives a purgative composed of calomel and scammony, and on the following morning he prescribes one massive dose of forty or fifty drops of a 1 in 1000 solution of crystallised digitaline, which is the equivalent of the sixty-fifth of a grain of crystallised digitaline corresponding to four or five times its weight of the amorphous variety. The effect of this single dose is apparent in a few hours, polyuria setting in with relief to all the symptoms. Professor Potain is also an advocate for this

massive dosing—that is, the administration of one single dose of the alkaloid.

Ankylosis of the Heart in the Child.

Discoursing on this subject at the Hôpital des Enfants Malades, Professor Grancher analysed the diagnosis, prognosis, and treatment. He states that the retraction of the intercostal spaces synchronously with the systole is rarely observed. The physical sign indicated by M. Potain—viz., immobility of the apex, irrespectively of the position of the patient—is more reliable. But this sign has no pathognomonic value, for a greatly hypertrophied heart may so fill the entire pericardial pouch that despite the absence of ankylosis it is materially impossible for the organ to change its position with that of the patient. The two signs pointed out by Dr. Cadet de Gassicourt—acute hypertrophy and dyssystole—appear to M. Grancher to possess more diagnostic value. He states that whenever in a child there are noted rapid heart hypertrophy and acute dyssystole (heart failure) ankylosis (*symphyse cardiaque*) may be unhesitatingly diagnosed. As for the prognosis, it is very gloomy, differing in this respect from endocarditis, which is better supported in the child than in the adult. In the treatment he insists on an uninterrupted sojourn in bed extending over several months, the meals given being frequent, small, and easily digestible. A layer of cotton wool should be kept applied over the heart region, and recourse should be had to frequent revulsion by means of the thermo-cautery or flying blisters (preferably by the latter means).

The Advantages and Disadvantages of Bicycling.

The discussions at the Academy of Medicine referred to by me in my last letter have culminated in the appointment of a Commission whose duty it will be to study and report on the subject in all its aspects. The members of the Commission are Drs. Marey, Gariel, and Hallopeau. The appointment of M. Marey is a guarantee that this form of exercise will be exhaustively analysed from a physiological standpoint.

Sept. 24th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

The Association of Executive Health Officers of Ontario.

THE ninth annual meeting of the Association of Executive Health Officers of Ontario was held in Chatham on Aug. 14th and 15th, the attendance being large. This year the papers were presented in groups of allied subjects as follows: Municipal Sanitation, Sewerage and Disposal of Sewage, Methods of Dealing with Consumption and other Contagious Diseases, Public Water Supply, and School Sanitation.

Crime in the Dominion.

The criminal returns have just been issued for the year ending Sept., 1893. They show an increase in the number of indictable offences during that period over the previous year, the figures being 4630 and 4040 respectively. In the category of "offences against person" there was an increase of 98—only 7·4 per cent. of the convictions were against women; 18·9 of the total number were unable to either read or write—and there were 2521 moderate and 1738 immoderate drinkers.

Diphtheria and Enteric Fever in Toronto.

The following tables show the result, in a great measure, of efficient sanitary measures as carried out in the city during the two years that Dr. Charles Sheard has been the medical officer of health:—

Diphtheria.

Months.	1892-93.		1893-94.	
	Cases.	Deaths.	Cases.	Deaths.
May	141	43	84	15
June...	122	22	57	21
July	75	14	20	8
August	41	6	30	12
September	75	16	24	8
October	195	32	40	12
November	194	46	39	18
December	146	44	42	12
January	115	35	40	11
February	79	21	28	5
March	109	25	21	4
April	56	16	23	7
Totals	1353	320	448	133

Enteric Fever.

Months.	1892-93		1893-94	
	Cases.	Deaths.	Cases.	Deaths.
May	25	7	15	3
June...	19	4	13	3
July	25	0	6	0
August	57	3	20	3
September	88	12	27	3
October	69	19	27	3
November	49	6	25	8
December	31	5	15	1
January	35	9	11	1
February	111	17	12	1
March	139	23	7	0
April	45	5	51	7
Totals	693	110	229	33

Tuberculosis in Cattle.

Last month some twenty-two head of thoroughbred cattle suffering from tuberculosis were slaughtered at the Experimental Farm, Brandon. Among the herd were some of the best specimens of Galloways, Ayrshires, shorthorns, Holsteins, and Herefords in the Dominion. The authorities are to be commended for their prompt action in destroying these diseased animals.

Miracles (?) at the Shrine of St. Anne.

Each succeeding year seems to bring larger numbers of the "faithful" to this shrine at Beaupré, in the province of Quebec, and a few portions of the anatomy of that sainted woman have wrought such miracles (?) that other holy fathers besides those at the historic Beaupré have secured other osseous portions, and we may expect to hear of rival cures before long in New York and at Ottawa. They will not, however, be able to outdo the former shrine in antiquity, for since 1661 miraculous healings have been accomplished, and during the past twenty years there have been 1040 organised pilgrimages of more than one million and a quarter persons.

The Ontario Vaccine Farm.

I append an abstract of the recent pamphlet issued by the Provincial Board of Health in compliance with a resolution of the College of Physicians and Surgeons, Ontario, *re* vaccine and vaccination from the points:—The Provincial Board of Health of Ontario takes pleasure in forwarding the following statement of methods adopted by Dr. Alexander Stewart, Palmerston, in the preparation of vaccine at the Ontario Vaccine Farm. 1. The vaccine is prepared wholly from selected calves of from six months to a year old. 2. The part vaccinated is first cleanly shaved and subsequently well washed with hot soap and water and then scarified and inoculated with bovine virus from a previous vaccinifer. As taking the virus directly from one calf to another in a series slowly develops a virulence in the lymph, it is necessary from time to time to start afresh from a modified lymph. 3. The inoculated points gradually develop into vaccine vesicles, whose normal characters are readily recognised by the experienced eye. The vesicle when mature (which is usually from the fifth to the sixth day) commonly bursts, immediately upon which the lymph is taken on the prepared ivory points previously well sterilised by boiling. 4. The points thus charged are left a few minutes in the air to dry, and are then coated with fresh albumen. 5. Having dried, they are at once packed in sealed jars and placed in the refrigerator. 6. When ordered they are packed in tissue paper and wrapped in rubber film, and transmitted by mail or express. 7. With each package directions are sent for keeping and using vaccine points. It is hoped by the Provincial Board of Health that the medical profession, to whom this circular is addressed, will endeavour, as the board is doing, to maintain the integrity of the scientific principles which underlie the practice of vaccination.

The American Public Health Association.

The twenty-second annual meeting of the American Public Health Association will be held in Montreal during the last week of this month. A most interesting convention is expected. The association's membership extends over the United States, Mexico, and Canada, and this is the first year of its meeting in this country.

FOREIGN UNIVERSITY INTELLIGENCE. — *Halle:* Professor Behring, of Berlin, has been appointed to act as locum tenens for Dr. Fraenkel, the newly-appointed Professor of Hygiene, as he will not be able to enter upon his duties until Easter.—*Clausenburg:* Dr. Blasius Kenyeres, of Budapest, has been appointed to the Chair of Forensic Medicine.

NEW ZEALAND.

(FROM OUR OWN CORRESPONDENT.)

Poisoning by Tobacco.

THE New Zealand Press Association states that an inquest was held at Auckland on July 28th on the body of Eric McCullough, son of the manager of the Bank of New South Wales, who died somewhat suddenly. The boy was taken to James Beard, a hydropathic practitioner, who diagnosed the case and prescribed for worms an injection of a decoction of tobacco mixture—1 oz. of tobacco to two and a half pints of water—and a certain dietary regimen. The first injection was given by the parents with an enema. A second was given five days subsequently, and, after vomiting and purging, the boy died in a short time. William McCullough deposed that the boy had suffered from worms while in Queensland, and was not in robust health. He had not received personal benefit from Beard's treatment, and took the lad to him because of his reputation. He did not know the dangerous properties of tobacco in using it in the way of injection. Drs. Lindsay and Gordon, who made a post-mortem examination, deposed that there was no organic disease and no trace of worms. They condemned Beard's treatment, and never heard, in modern practice, of tobacco being used in such a way. For such purposes a drachm would have been equally fatal. Beard stated in evidence he had dictated a diagnosis, in which was a prescription, to his female assistant. He could not remember whether he had dictated an ounce or a drachm. He had a drachm in his mind. A verdict was returned that deceased came by his death through an injection of tobacco, otherwise narcotic poisoning. The above sad calamity needs no comment, except to show how necessary the clauses in the amended Pharmacy Act are to the public of this colony.

Obituary.

DR. OSCAR FRAENTZEL.

BY the death, on the 18th inst., of Oscar Fraentzel at the age of fifty-six, after a long illness, Berlin has lost one of its ablest teachers of clinical medicine. He was a pupil of Traube, whose assistant at the Charité Hospital he became in 1867, and some of the valuable contributions to clinical medicine made by that distinguished physician were based upon researches carried out in conjunction with Fraentzel. In 1869 Dr. Fraentzel was appointed to the Augusta Hospital, and in 1870 to the charge of wards at the Charité. He will be best remembered for his contributions to cardiac pathology and to the clinical and therapeutical investigation of pulmonary diseases. He wrote the article "Pleuritis" in Ziemssen's Cyclopædia, and contributed many papers on the subject of tuberculosis and its treatment. Quite recently he had published a volume of clinical lectures on Diseases of the Heart, which are characterised by a clearness of style and soundness of judgment that render them of great value. As our contemporary, the *Berliner Klinische Wochenschrift* (from which we learn the above facts in his career), says, this work, issued in the evening of his life, pursued and extended the path which he trod in company with Traube.

WILLIAM LAUDER, M.D. EDIN.

THE death, at the early age of thirty-eight, of Dr. William Lauder, which took place at his residence, 360, Oxford-road, Manchester, on the 17th inst., has been a general subject of deep and genuine regret among his numerous lay and medical friends. He had only just returned from a pleasant holiday in Scotland with the poison of typhoid fever introduced into his system. The symptoms at first were not serious, but heart and lung complications terminated fatally in spite of the great and constant care bestowed upon his case by his friends, Drs. Edge and Harris. Dr. Lauder was a son of the Rev. William Lauder, of Port Glasgow, who survives him. He graduated in Edinburgh in 1878 and took his M.B. and L.R.C.S.Edin., and a few years later his M.D. In Manchester he first filled the post of resident medical officer of the Chorlton-on-Medlock Dispensary, and afterwards was house surgeon to St. Mary's Hospital, and house surgeon and latterly full physician to the Southern Hospital for Women and Children. His great characteristic was his conscientiousness, and the high esteem he was held in is due to this trait. He took a serious view of life, but he had in him a fund of quiet humour which relieved this apparent reserve. His funeral was attended by a large number of his medical friends, and the presence also of so many other persons, both rich and poor, testified to his undoubted and well-deserved popularity. He leaves behind him a wife, but no family.

DR. HEINRICH HOFFMANN.

ON Sept. 20th, at Frankfort, the town of his birth, this well-known physician died suddenly of apoplexy in his eighty-fifth year. He was a well-known alienist, and held a high position in Germany among his colleagues, having achieved the rank of Geheimer Sanitätsrath. Strangely enough, his name will be handed down to posterity not so much on account of his undoubted professional achievements, but as the writer of one of the most popular books for the amusement and instruction of children that has ever been written. "Struwwelpeter" was first published in 1845; it has passed through 135 editions, and has been translated into nearly every European language; it has contributed to the delight and instruction of hundreds of thousands of children in all parts of the world. Who cannot remember the grotesque pictures and homely verses describing the well-earned fate of "Shock-headed Peter," the tragedy of "Cruel Frederick," "The Dreadful Story about Harriet and the Matches," and the giant figure of "Tall Agrippa"? Dr. Hoffmann was induced to write the book for the amusement of his own children owing to the difficulty he had in finding stories likely to interest young children. The stories he was at that date able to purchase were mostly "long tales with stupid collections of pictures, moralising stories beginning and ending with admonitions like 'the good child must be truthful,' or 'children must keep clean,' &c." With a keen and sympathetic insight into the working of the child-mind he realised the folly of attempting to induce a child to reason abstractedly, and thus it was that these delightfully absurd sketches were launched on their journey round the world. In the preface to his book Dr. Hoffmann points out that "it is a difficult thing for a doctor to make little ones from three to six years old feel at ease with him, because when they are in good health the medical man and the chimney-sweep are very often made bugbears of." A slip of paper and a pencil and a comic story he found would often put him on terms of friendship with his little patient. The medical profession may justly feel proud of a colleague whose happy genius enabled him to appeal in such a healthy way to the minds of thousands of little children.

DEATHS OF FOREIGN MEDICAL MEN.—The deaths of the following members of the medical profession abroad are announced:—Professor Karl Martin Albrecht, at Hamburg; when a lad he spent three years in a commercial house in Manchester, and after his return to Germany he took up school work again, and passed the Maturity examination when he was twenty. He then studied Medicine and Zoology, and took the degrees of Doctor of Medicine and Doctor of Philosophy. Afterwards he taught Anatomy at Kiel and Königsberg, but soon gave up teaching and took to scientific investigation. He published papers on the Development of the Base of the Skull, the Eustachian Tube, and the Inter-maxillary Bones, some of his researches being carried on in conjunction with Kölliker. In comparative anatomy he published papers on the Position of Man amongst the Mammalia and on a Special System of Comparative Anatomy. For some years he had given up scientific work and taken up theology, philology, and history. His age was forty-three.—Professor Christian Lemcke, of Rostock, where he held the chair of Otology and Laryngology. His chief work was a most elaborate report upon "Deaf-mutism in the Grand Duchy of Mecklenburg-Schwerin: its Cause and Prophylaxis." He visited the deaf-mutes at their homes, and obtained all the information possible as to their relatives and surroundings, and thus was able to produce a most valuable report.—Dr. von Beck, surgeon-general in the Baden army, who was well known as an accomplished military surgeon.

THE EIGHTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

A GENERAL CRITICISM.

(FROM A SPECIAL CORRESPONDENT.)

LOOKING back upon the whole work of the Congress, and now that there has been time to discuss the matter with different English and foreign members, the necessity of some medical reform in the organisation of such Congresses becomes absolutely obvious. Congresses are undoubtedly degenerating. They are becoming huge bazaars and picnics. The entertainments and the banqueting are destroying their earnest purpose and attracting a great number of persons who ought not to be admitted. The chief stumbling-block is the local element. Foreign nationalities only send notabilities to the Congress. The expense of the journey creates a natural obstacle, and prevents the attendance of those who have not a serious purpose in view; but for the inhabitant of the country in which the Congress is held, and still more for the inhabitant of the town, it is no sacrifice; on the contrary, it is a material benefit to attend the Congress. For a fee of sixteen shillings a number of young, badly-behaved, and boisterous Hungarians, who had little or nothing to do with hygiene, became members of the Congress. This enabled them to perform railway journeys at half the usual railway fare and to participate in a number of banquets, entertainments, and gala performances gratuitously. They besieged the Secretary-General for invitations for themselves and their lady friends, and this to such an extent that in the confusion thus occasioned many of the most distinguished foreign visitors and the whole of the foreign Press were omitted. Of course there were complaints, of course the Secretary-General was greatly distressed that these omissions had taken place, particularly in respect to the representatives of the foreign Press, who were not able, during the first half of the week, to perform satisfactorily their duty. But if it had not been for the crowd and clamour of local youths and unknown individualities, such confusion would not have arisen and such blunders could not have been committed. Perhaps a rule might be established by which natives of the country in which the Congress is held should pay an entrance fee four or five times larger than that paid by members coming from abroad. This would have the advantage of reducing the number of members while not affecting so materially the amount of the receipts. The Congress would do more work, and would be infinitely more manageable if there were only about five hundred members. Certainly there should not be more than a thousand members. Also it must be borne in mind that towns are not easily persuaded to assume the responsibility of inviting from two to three thousand people. Already it has been found very difficult to obtain an invitation for the next Congress. Formerly, when the Congresses consisted of a few hundred members, there were plenty of invitations, and the only difficulty was to decide which to accept. Now, on the contrary, towns and Governments hesitate to assume the responsibility of inviting such a crowd.

If the next Congress, which is to be held at Madrid in three years, is not organised in a totally different manner, it is quite possible that no invitation whatsoever will be forthcoming for the ensuing Congress. As already stated, the first of all measures necessary is the exclusion of the useless local element—the *bouches inutiles*, as the French graphically put it. This local element at Budapest was much *en évidence*. Wherever refreshments were offered crowds of boisterous young natives besieged the buffets. They clutched at the dishes of meat, and even of fish, with their hands. Too eager to wait till they were served, or even to secure plates, knives, or forks, they carried away hunks of meat in their fingers. Such persons have no business to be present at a Congress and must in future be rigorously excluded.

On the other hand, where the excursions were limited in number, and something like a selection had been made, the most enjoyable and pleasant receptions resulted. Unfortunately, and through the mismanagement already mentioned, these, the best excursions, were not witnessed by the representatives of the foreign Press. The organisers of future Congresses should draw up a separate list of the representatives of the Press, and arrange that, where invitations are limited in number, the Press should have the first option of attending. Before the Congress assembled the Secretary-General did all he could to aid the members of the Press, but when once the crowd of ordinary members came down upon him he was overwhelmed and, having failed to prepare a separate list of the members of the Press, was unable to see after their interests. It was necessary to make a protest, and then the desired list was drawn up, and for the latter half of the week the representatives of the foreign Press had every possible facility granted to them. By that time, however, several important opportunities had been lost, and many instances of gracious hospitality remain unrecorded. This should not lessen, however, the gratitude due to the good intentions and the good feeling manifested on all sides. The Hungarians were most eager to shower lavish hospitality on their hosts, and some of the excursions and private receptions were admirably organised and most princely in their character. As this was a Congress of Hygiene, foreign sanitarians were not unnaturally somewhat surprised to find Hungarians not only drinking out of the same glass, but often dispensing with glasses altogether and drinking out of the same bottle. As a matter of graceful deportment and refined manners this custom was open to criticism; but leaving that phase of the question aside, have not hygienists always taught the absolute danger of such practices and the facility with which disease may be conveyed from one person to another by smoking the same pipe, by drinking out of the same unwashed glass, &c.? It was scarcely gratifying to these sanitary reformers to find that their teaching was so little observed even by those who professed to know enough about sanitary matters to belong to a Congress of Hygiene. All these unpleasant details might, it may be thought, be passed over in silence; and but for apprehensions for the future it would have been more agreeable to leave them unnoticed. But by recording these facts the necessity of excluding "the useless mouths" will be better understood, and therefore I again urge on the organisers of the next Congress to only admit such native engineers, architects, and medical men as hold really prominent positions in the science of hygiene. The number of members must be cut down—reduced to a half, if possible to a third, of the numbers attending the London and the Budapest Congresses.

The same process of pruning must be applied to the number of sections and the number of subjects treated. Further, a feeling seems to be growing that in the future it will be necessary to draw a clearer demarcation line between medicine and hygiene, and that only such medical men as are actively engaged in the preservation of public health, or in the practice of preventive medicine, need attend the Congresses of Hygiene. For medicine, it is pointed out, there is the Medical Congress, which last met at Rome and is next to meet in Russia. The great object of the Hygiene Congress is to unite the medical officers of health of England and those of other countries who perform kindred duties, and medical men generally, who are authorities on practical sanitation, with the engineers, the architects, police officials, municipal and other administrators. Men whose duty it is to build sewers, drain houses, give light, ventilation, and air to dwellings, ensure their freedom from dampness and foul emanations of the soil, have every need to discuss practical sanitation with police officials and administrators, and with medical men and men of science generally, who have made sanitation their life-long study. The great force of the Hygiene Congress is that it is not a congress of one profession, but of many professions, all united, however, by the pursuit of one and the same object—the preservation of public health.

In conclusion, let me point out that plenary sittings of the Congress must be held, but not such sittings as that attempted at Budapest, where, without any discussion and in the brief space of one single afternoon meeting, the members of the Congress were asked to accept or reject some hundred resolutions voted in the sections. The futility of such a meeting as this has already been fully described. In the future, as in the past, the Congress should meet in the afternoon as a general assembly, to discuss and vote upon reports prepared in advance and translated. Such reports should deal with questions that are ripe and on which it is desirable to make an international demonstration of such an imposing character as will not fail to influence the Governments of different countries.

In thus criticising the Budapest Congress it is needless to say I have only the cause of hygiene at heart. If reference is made to the criticisms in THE LANCET of the Congress

held in London in 1891 they will be found to be equally severe. The cause is too important to admit the influence of national prejudices or preferences; the truth, and the truth only, has to be stated, and it is solely in the interests of future Congresses that in the cases both of the London and the Budapest Congresses faults and shortcomings have been freely exposed. This, however, does not in the slightest degree affect the deep debt of gratitude due to Professor Coloman Muller, who for months, indeed for three years, had toiled with unremitting energy as Secretary-General of the Budapest Congress. Professor J. Fodor, the ever courteous and amiable President of the Executive Committee, leaves on the minds of all the members of the Congress the most pleasant impression. To the whole Hungarian people the Congress owes a lasting debt of gratitude. Nothing could have been more generous, more hearty, and more enthusiastic than their welcome.

THE EXHIBITION.

In connexion with the Congress and on the same premises an Exhibition of Hygiene was held. It was divided into six sections. The first section, dealing with the hygiene of towns, contained many plans and drawings of the sewers of Alexandria, of Amsterdam, of Arad, Hungary, of Brescia in Italy, of Brunn, Budapest, Debreczen, Graz, Gyor, and Kolozsvar in Austro-Hungary. From Swiss, French, Russian, American, German, and other towns came drawings of sewers, waterworks, hospitals, &c. The second section was devoted to a collective German and Austrian exhibition, the third to Hungary, the fifth to all that related to cremation, and the sixth to mineral waters. Among these last there were the well-known Hunyadi Janos waters; and the Æsculap waters, which for our readers have this prestige, that they are the only waters in Eastern Europe whose bottling and distribution are entirely under English supervision. Among the English exhibits, which were not numerous, Messrs. Brand and Co. showed their foods for invalids, which were examined with much curiosity by the Hungarian medical men. Messrs. Burroughs, Wellcome and Co. had a good display of their tabloids. These are already well known and appreciated in Hungary. Messrs. Hertz and Collingwood treated thirsty visitors to their sugarless champagne. There were also specimens of Dr. Graf's byrolin aseptic ointment and a few other pharmaceutical products. The Anglo-Swiss Condensed Milk Co., too, exhibited their goods. In a court-yard various specimens of disinfecting stoves were shown, but these did not possess any new features, and altogether it must be confessed that the Exhibition did not attract many people. What with the twenty-six sections and all the excursions, the Exhibition was perforce somewhat neglected. A great number of books and official reports were sent to the Exhibition by individual authors and by municipalities. These contained much useful information, but no one had time to consult them. It is certainly a great mistake to crowd too many things into the one week. They tend to spoil each other. The Exhibition might with advantage have remained open for a day or two after the Congress terminated; perhaps then some of the delegates would have been able to do justice to the objects shown.

THE FOURTEENTH CONGRESS OF THE SANITARY INSTITUTE.

THE Fourteenth Congress of the Sanitary Institute was formally opened at Liverpool on Monday, Sept. 24th, when the Right Hon. the Lord Mayor of Liverpool received the members of the Congress at the town-hall. In the afternoon the inaugural address was delivered by the President, Sir Francis Sharp Powell, Bart., M.P., who in the University College afterwards received the official delegates.

Following the reception of the members of the Congress by the Lord Mayor, a public luncheon was attended by a numerous company. Among those present were the Earl of Haddington, Sir Francis Sharp Powell, M.P., Bart., President of the Institute, Sir Charles Cameron, Sir Thomas Crawford, Mr. Ernest Turner (chairman of Council), Mr. G. J. Symons, Professor Wynter Blyth, Major Lamorock Flower, Dr. L. Parkes, Dr. Reid, the Mayor of Chester (Alderman C. Brown), Mr. E. K. Muspratt, Rev. Canon Major Lester, and Mr. H. P. Boulnois and Dr. Hope (local secretaries). After the loyal toasts had been duly honoured the Lord Mayor, who presided, extended to the Sanitary Institute, on behalf of the citizens of Liverpool, a warm welcome to the city. In the past, he said, Liverpool had been called the black spot on the Mersey, but the people very highly recognised the value of sanitary science, and he hoped that before the members of the Congress left they would be able to say that Liverpool was now a bright spot. Mr. Ernest Turner responded.

Sir Francis Powell's inaugural address was confined mainly to a review of the work of sanitary progress in relation to public health as affected by administration and by law in England and Wales. He referred to this progress with great satisfaction and maintained that the improvement in public health had fully justified both the cost and labour which it had involved. The praise which he bestowed upon the Local Government Board and upon local authorities for their energetic and successful action against the invasion of cholera will be echoed by all who have followed the labours of the medical department of the Board and of the officers in the different districts under its auspices.

The Health Exhibition was opened during the evening of Monday by the Lord Mayor in the drill-hall of the 2nd Volunteer Battalion, the King's (Liverpool Regiment), Upper Warwick-street. An interesting display of sanitary appliances was shown, and during each afternoon and evening of the week the visitors were entertained by Madame Hirsch's Ladies' Orchestra. Special arrangements were made for cooking demonstrations, and these were admirably carried out.

At the adjournment of the sitting of the Sanitary Inspectors' Conference on Tuesday the members visited the Birkenhead abattoirs and lairages, or resting-places for the cattle about to be slaughtered. The party numbered nearly 200 and showed considerable interest in the arrangements of the great cattle depôts. The Birkenhead Hospital for Infectious Diseases was next visited, and a journey was made to the Wallasey waterworks. Returning by way of Liscard Park the members of the party were entertained by Dr. A. Craigmile, and the chairman and members of the Wallasey Local Board.

Dr. George Blundell Longstaff delivered a lecture to the Congress on Tuesday evening, dealing with the overcrowding of houses on land. In the course of his remarks he regretted the tendency among medical officers of health to attach a disproportionate importance to zymotic diseases, while among laymen, he complained, the word "sanitation" had come to be synonymous with "drainage." His lecture was illustrated with reproductions of the photographs depicting the condition of the Hamburg slums which appeared in THE LANCET.

The first of the three Sectional meetings, that of Sanitary Science and Preventive Medicine, was held on Wednesday, Sept. 26th, under the presidency of Dr. E. E. Klein, F.R.S., who delivered an address on the etiology of typhoid fever. Dr. Klein considered that as far as bacteriological evidence went, there was no valid reason why sanitarians should not continue to regard typhoid fever as a specific disease derived from an antecedent case or cases of the same disease, and not, as had been suggested, on bacteriological evidence alone, as being capable of originating *de novo*, that was to say, through the bacillus coli communis. While holding this view their duty of preventing pollution with sewage of drinking-water, milk, &c., was not less incumbent, for, although

without the typhoid germ the bacillus coli communis might not be capable of causing typhoid fever, the presence of bacillus coli communis in water nevertheless indicated a probable pollution with excremental matters, and amongst them possibly with specific, i.e., typhoid, excremental matter.

THE PRESIDENTIAL ADDRESS.

Sir Francis S. Powell, M.P., in a bright and comprehensive speech devoid of technical details, dealt in a general manner with questions of public health in England and Wales as they are affected by law. The hindrances to progress in sanitary science, he said, had diminished both in area and gravity and the improvement in public health had justified both the cost and the labour expended. Some estimate of the expenditure of capital and readiness to expend it might be formed from the fact that the Local Government Board had during the last twenty years sanctioned a capital expenditure, chiefly for sanitary purposes, of £53,021,334 in urban and £3,923,270 in rural districts; while during the same period local Acts had authorised a further expenditure of £67,335,956. Vital statistics abundantly proved the wisdom of such expenditure. With these facts before them they must press forward, jealously maintaining the ground which they had secured and extending the boundaries of their dominion. The Sanitary Institute might justly claim some part in this work. Dealing with the subject of quarantine, the President said no test could be more severe than the epidemic of cholera on the Continent in 1892, and no more complete success could result. Referring to the question of vaccination, he said that few delays could cause more surprise and disappointment than those which attended the proceedings of the Royal Commission on Vaccination. Never was there a time when words of caution were more necessary, the percentage of cases not finally accounted for as regards vaccination being higher in the year 1891 than in any former year since the commencement of the Vaccination Act. After touching briefly upon the broad questions of the alleged increase of lunacy and the Parliamentary inquiry into food adulteration, he concluded by reminding his hearers that public health depended largely on the condition of the house. "We desire the advance of our people in health, in culture, in a sense of beauty. Such advance is impossible when they live amid bad surroundings. Let reform be made quickly and effectively. ..... We must with all zeal bestow energy and knowledge on the improvement of our towns. To the attractions already dominant let there be added those of health, and even of ornament. Let us all press on in our great task, each a thoughtful and active worker in his own province. Our reward will be seen in every home which we purify, in every family which we strengthen, and in every population which we elevate."

THE CONFERENCES.

Although the Congress was opened on Monday, the proceedings were mainly of an inaugural character, and the actual work of the various Sections did not begin until the following day, when the conferences were synchronously commenced.

CONFERENCE OF MEDICAL OFFICERS OF HEALTH.

The address delivered by Mr. C. E Paget, the President of this Conference, will be found printed in full upon p. 725 of this issue.

Diseased Meat.

Dr. Alfred Hill (Birmingham) read a paper on this subject in the course of which he remarked that although there were a few diseases which did not render flesh unfit for consumption, providing certain parts were interdicted, there remained a large number of diseases which were regarded as more or less positively dangerous to the consumer of the meat from animals which were affected by them, some of which were transmissible to man. With regard to tuberculosis, he reminded the Congress that it was generally considered sufficient to deal with slight cases of tuberculosis as with other diseases, and, with the exception of a few towns, he believed the system of partial instead of total condemnation held good both here and on the Continent. He submitted that the case for the total condemnation of food was not proven, and until we found sufficient grounds for adopting the stricter line of action we should keep to the system at present in use.

Sewage Disposal.

This question was discussed in a paper read by Dr. H. Littlejohn (Sheffield). He took it for granted that all sanitarians were agreed that the only method of sewage disposal consistent with modern civilisation and sanitary science was that by water carriage, but it was a matter for surprise that a general system of water carriage disposal advanced so slowly amongst the large towns of the country. What was now needed was a perfect system of treatment of sewage. The system he advocated was that of precipitation by alum and lime, the effluent being treated by irrigation.

Dr. George Reid (Stafford) discussed the question of slop-closets, remarking that recent experiments in Stafford had shown that the arguments in favour of the slop closet system, based upon the diminution in the volume of sewage to be pumped and disposed of, appeared to be far outweighed by the complications which the system gave rise to.

Dr. E. W. Hope (Liverpool) read a paper on the Real Import of Death Returns. He stated that the real value of crude death returns consists in the index they furnish to the progress of any one city during a successive period of years. This was illustrated by a diagram of the progress of the city of Liverpool during the last three decades.

CONFERENCE ON THE SANITATION OF THE PASSENGER AND MERCANTILE MARINE SERVICES.

This conference was opened by the President, Sir William Bowers Forwood, who delivered the following address:—

"The Council of the Sanitary Science Congress have very appropriately decided that special attention shall be directed at this meeting to the sanitation of the ships of the mercantile marine, recognising that in the Port of Liverpool the great stream of emigration which flows towards the United States has its origin, and therefore that a conference on this subject, while it will throw light upon the sanitary conditions which at present prevail, may also lead to suggestions which may tend to their further improvement. In discussing the question of sanitation on ship board we must not forget that the conditions of sea-life differ greatly from those of shore-life. On shore three great physical essentials to sanitation—good drainage, pure water, and fresh air—are secured generally only imperfectly, and frequently with great difficulty, and even when secured their value is too often destroyed by the dirty, thriftless habits of the people; at sea these three great essentials to health can be obtained without difficulty, and, the seaman and the emigrant being under command, their proper use can be secured without fail. We can only compare a ship at sea to a shore institution surrounded by a perfect system of drainage, with an abundant supply of good water, and situated on the hillside, open to all the winds of heaven, with the inmates under perfect discipline. It seems strange that with such conditions the question of the sanitation of our ships need be discussed, yet it is not many years since the forecastles of many of our merchant ships were a disgrace to our civilisation. Situated right in the bows of the ship, often not more than 4 feet 6 inches to 5 feet in height, cumbered up with the windlass, chain cables, and hawsers, flooded with water, which rushed through the hawse pipes every time the ship plunged into the sea; destitute of sanitary conveniences of any kind, and filled with the hot steamy atmosphere of bad tobacco and damp drying clothes, for which there was no escape, as there was no ventilation whatever; no wonder that existence in such dens degraded the life of a seaman, and its baneful effects are still felt. In many modern ships the crews are comfortably quartered in a deck-house, where they can keep dry and warm, and sanitary arrangements are provided in the shape of closets and wash-basins, and in some ships baths also are to be found; while the food of the sailor is no longer the dull attenuating monotony of salt pork and pea-soup and salt beef and plum-duff; in well-owned ships he is well fed with a generous allowance of fresh meat and vegetables. The condition of emigrant life on board one of the old-fashioned sailing ships also left much to be desired—the emigrants being huddled together as closely as they could be packed in steerages rarely over 6 feet 6 inches in length, generally less, with only such light and ventilation as the narrow confined hatchways would afford, and at night lighted by a few miserable oil lamps which served only to make darkness more visible. On deck there was an absence of all shelter, and in bad weather the emigrant had only the choice

of being drenched by the seas as they swept the deck, or to be poisoned by the pestilential atmosphere of the 'tween decks; the food supplied was of the scantiest description, inferior in quality, and badly cooked. To-day an emigrant in one of our great Atlantic steamers makes the voyage under sanitary conditions greatly superior to those he enjoys in his own home; the steerages are lofty and well ventilated by movable cowls and electric fans, and abundantly lighted by large side ports by day, and by the electric light by night; the beds and bedding are scrupulously clean, the bedding is supplied by the ship-owner and is never used for a second voyage; ample seat and table accommodation for meals is provided, and each compartment is furnished with a pantry and hot and cold water under the care of a special attendant; on deck a spacious promenade is available to the emigrant under a shelter deck where he can take exercise in all weathers; the sanitary arrangements are excellent; and his food is well cooked and without stint as to quantity; for his midday meal he has always soup, fresh meat, and potatoes. Every morning, after breakfast, the emigrants are all sent on deck, while the steerage is thoroughly cleared and ventilated; and the captain and doctor at this hour make a personal inspection to see that everything is sweet and clean. I have been present at many of these inspections, and have been much struck with the cleanliness which prevails, and with the purity of the atmosphere. The ship doctor has ample hospital accommodation at his command, and is furnished with a complete dispensary and surgery. The sanitary condition of our emigrant ship very greatly depends upon the strict observance of the rules as to cleanliness and ventilation; for this the captain and doctor are primarily responsible, and I attach the greatest value to the daily inspection made by these officers. It was my fate to make a voyage in an emigrant ship to Australia thirty-five years ago. I frequently cross the Atlantic, and I can assure you that I have not overdrawn these descriptions.

"How has this great change, this vast improvement, been brought about? In the first place, it is due to the substitution of steamers for sailing vessels; to their increased size; to competition; and, lastly, to the more stringent Board of Trade regulations. The influence of the regulations of the Board of Trade I put last, because, except in regard to the deck space allotted to each emigrant in the steerage, the arrangements made by ship-owners are a long way ahead of the Board of Trade requirements; and in regard to the size of the steerages and their capacity to accommodate emigrants the Board of Trade regulations are often arbitrary, failing to take into account the large air space and ventilation afforded by lofty 'tween decks, improved means of ventilation, and making no distinction between a vessel crossing the cool latitudes of the Atlantic and those traversing the tropical climates of the Red Sea and Indian Ocean. In this way ship-owners are considerably handicapped in the keen competition waged by foreign steamers. The question which you will now expect me to answer is, In what way can the sanitation of the mercantile mariner be improved? I do not say it is not possible to further improve the sanitary conditions; reducing the number of emigrants would give more air space, but it is not required for health; and in these matters we must above all things be practical, and have reference to the conditions and circumstances of the trade; and so long as the State makes such regulations as will secure the health and safety of the emigrant all else may be safely left to the effect of competition. State regulations must be always arbitrary, and tend rather to check than promote improvements. I confess I am unable to suggest any practicable improvement in the sanitation which prevails in our more modern Atlantic liners. It seems to me that the emigrant travels at sea under conditions vastly superior to those available to him on shore, or which ordinarily surround his own home. Of course, all steamers do not offer these conditions, but competition must raise the general standard to that of the best. The science of ventilation is being better understood every day, but it is still far from being perfect, and in this direction we may hope for further improvement. In the accommodation usually given to seamen there is still often an absence of sanitary conditions. Here competition does not come in, and the indifference and greed of the ship-owner are too often apparent. It would be very arbitrary to enforce a regulation prohibiting the use of the forecastles, because they can be made comfortable, though they are not always so, and their ventilation must always be difficult, and greater privacy ought to be given to a sailor than is possible in an open forecastle. I know the tendency in these days is to ask for State interference and regulation in all the affairs of life. I am strongly of opinion that this is being pushed to a mischievous extent; it has a paralysing influence and destroys personal responsibility, and, beyond laying down regulations necessary for the safety of life and promotion of health, all else may and should be left to the ship-owner, who is keen enough in his own interest to see that life on board his ship is not only healthy, but so comfortable as to secure for his ship a good name and reputation."

Medical Inspection of Emigrants.

Dr. J. Wright Mason (Hull) read a paper on this subject in which he urged that the medical inspection of vessels carrying emigrants should take place immediately upon arrival and before the emigrants were allowed to land. He pointed out that there was at present neither statutory power to detain emigrant vessels arriving in this country nor penalty on masters for giving improper and inaccurate information to medical officers, and he hoped that further legal powers would be given, so that the matter might be remedied.

Port Sanitary Administration.

Dr. Collingridge (London) read a paper, of which the following is an abstract:

The one object of port sanitary administration must be to preserve the public health, embracing the sanitary supervision of all shipping lying in the port and also the inspection of all vessels on arrival, in order to prevent as far as possible the introduction of infectious disease. For sanitary supervision of shipping in port it was essential to have a sufficient staff of thoroughly trained sanitary inspectors—men who have been to sea in responsible positions, and ought undoubtedly to hold masters' certificates. The principal points to be attended to in the sanitary inspection of shipping are forecastles, their position and structure. Every obstacle should be placed in the way of owners providing lower forecastles, which were damp, dark, and difficult of ventilation, while every inducement should be given for the erection of deckhouses where these serious defects could be easily remedied. Ventilation could be easily improved in the majority of cases. The space provided by law was too small—72 cubic feet per head was not sufficient for the normal man to live in and continue in health. The law enacting this amount of space was now forty years old, and the time had come when it should be largely increased, to certainly not less than 100 feet per head. Light paint should be freely used, so as to make the most of the small modicum of light considered necessary, and proper arrangements should be made for drainage. Every port should have at the entrance or boarding station a well equipped hospital for the isolation of infectious disease. For the disinfection of clothing &c. there could be no doubt that treatment by steam was not only the most efficient, but also the most economical, both with respect to time and money. Under the present arrangement, when a vessel arrived in a British port from abroad, she was visited by a Custom House officer who had no medical training, and who did not inspect the crew in any way, but who asked the master of the vessel certain questions. From the answers given to these questions such Custom House officer has to decide the very difficult and important point as to whether the vessel should be at once admitted to pratique, or whether there was any infected person on the vessel, and removal and disinfection are required. Not only has this essentially professional question to be decided by a layman without inspection, but further, in the event of a false answer being given to such questions, Her Majesty's Customs had no legal power to punish the master for the offence. Again, if the vessel be found to have any disease on board other than cholera, yellow fever, and plague, no legal power existed for detaining her on sanitary grounds, and the officers of Her Majesty's Customs were therefore instructed not to place the vessel under detention, but to give notice to the sanitary officer, if possible, before any sick person is landed. This is obviously a highly dangerous and unsatisfactory state of things, and theoretically must always lead to a danger of importation of disease. Dr. Collingridge advised that the health inspection should be handed over to the local authority, who should be required to provide the necessary medical staff; while the officers of Her Majesty's Customs, relieved from this heavy responsibility, for which they have no adequate machinery, should utilise their launches for carrying the medical officers in making their necessary visits on arrival for revenue purposes. The vessel would be granted or refused clearance by

the medical officer; in the former case the Custom House officers would at once proceed with their duties, and in the latter the vessel would be detained by the local authority until the necessary removal of patients or disinfection had been carried out. This suggestion was after some discussion embodied in a resolution and carried.

Health of Seamen and of Mecca Pilgrims.

Brigade-Surgeon-Lieutenant-Colonel Nicholson read some statistics from the records of the Ocean Steamship Company as to the health of their seamen and of the Mecca pilgrims, who were a numerous class of the company's passengers. The charge made by the French against British vessels of bringing cholera from the East he did not find substantiated. As far as he could ascertain there had been no instance of cholera brought through the Red Sea by a British vessel. He then proceeded to show by means of comparative records for ten years that the health of the crews on the vessels of the Ocean Steamship Company was better than that of the crews of the Royal Navy. As to Mecca pilgrims, the company recorded during the ten years 146 voyages, on which 52,072 Moslem pilgrims of all ages were conveyed to and from Jeddah in the Red Sea. In 85 voyages, on which 28,507 pilgrims were carried, the deaths were 87, equal to a rate of 3·0 in the 1000. Even then they were chiefly due to old age and chronic disease. In 61 voyages conveying 23,565 pilgrims, there were only 15 deaths from infectious disease. The only deaths among the crews of the ships were on one voyage in which cholera broke out. Then four men died.

The Medical Department of the Mercantile Marine Service.

Mr. C. H. Leet, F.R.C.S. (Seaforth, Liverpool), read a paper upon this subject, in which he urged that the medical superintendent of shipowners should be under Government control, instances having occurred of the shipmaster interfering at sea with the medical duties of the surgeon of the ship, and on arrival home of the latter receiving no redress either from the medical superintendent or shipowner, the Board of Trade also not having the necessary powers to interfere on his behalf with the decision of the shipowner.

In a brief discussion on the paper Dr. Collingridge deprecated Mr. Leet's criticism of his own profession, and particularly his reference to the youth of ship surgeons.

Mr. Leet replied that he desired to protect ships' surgeons from liability to dismissal at the end of every voyage.

The Chairman thought the effect of Mr. Leet's suggestion would be to make the ship's surgeon a kind of superior authority, which would be open to many practical objections.

CONFERENCE OF SANITARY INSPECTORS.

Mr. Francis Vacher, F.R.C.S., Medical Officer of Health for Cheshire, the president of the Conference, delivered the following address:—

"My first duty is to welcome you here to a conference which has been wisely and considerately provided for by those who have organised The Sanitary Institute Congress in this city. We may rest assured that our conferring together on topics relating to our duties and daily work will be beneficial to ourselves and increase our usefulness to the public we serve. I would suggest that the subjects selected for debate be opened simply and concisely, and discussed with calmness and moderation, and I trust that we may approach each subject unbiased, fully desirous to learn what we can about it, and not without diffidence as to our own attainments. Your first question on being launched into sanitary work is, 'How can I make myself as thorough and efficient a sanitary inspector as possible?' The counsel I have to give will, I think, assist you to answer this question.

"*Do your utmost to conserve your health.*—I put this first, because, with the arduous duties you are called upon to perform, health is absolutely indispensable. Many hours of your day are commonly spent in squalid courts and squalid homes, and if you are to pass scatheless where there is disease and death and every noxious thing you must be in good condition, like the athlete trained for a contest. As you can hardly escape breathing much foul air at work, have a care that the air you breathe in the evening, when work is done, and at night, is as pure as you can obtain.

"*Continue your studies, and let them be minute, orderly, and explicit.*—Owen quite early in life took note of what others would neither see nor think of. Lyell, Agassiz, Darwin, Pasteur (I could mention a score of names as familiar), had also this happy characteristic of seeing what those around them failed to see. The inspector who looks close and inquires the reason why is the man of all others who is quick at resource, solves little practical problems, extemporises tests, discovers the cause of effluvia, and finds a way out of any ordinary difficulty.

"The great defect in the reports of young inspectors new to their work is that the statements therein are more or less vague and indefinite. A report is a formal document or entry in a book, and the information it conveys should be exact and complete, or it is of no value. When I read in a tradesman's circular that 'an enormous stock of most fashionable summer goods will be offered at an alarming sacrifice,' I am not surprised at a little hyperbole or want of exactness in the announcement. Advertisements are commonly written in what has been euphemistically called 'the language of commerce.' When, however, an inspector reports, with equal vagueness, that the common lodging-houses in his district were inspected and found in fairly good order, or that the dairies, cow-sheds, and milk shops were on the whole satisfactory, I am both surprised and dissatisfied. For any use I can make of such a report it might as well never have been written. As regards common lodging-houses, I want to know how many there are in the district; if they are all duly registered; the extent of accommodation provided; the number of inspections made; if any cases of infectious disease have been reported; the number and nature of offences (under the local by-laws) detected; the number of prosecutions instituted; the results, &c. As regards dairies, cow-sheds, and milk shops, I require information on the same lines. How many dairy-men are registered; have the local authority made regulations in respect of the trade; the number of inspections made; if any cases of infectious disease have occurred on dairy premises; particulars of the offences detected and prosecutions instituted."

CONFERENCE OF DOMESTIC HYGIENE.

The Lady Mayoress (Mrs. W. B. Bowring) presided over the Conference of Domestic Hygiene and delivered an address in which she advocated the training of girls to a right estimate of the value of sanitary laws, and to give them an opportunity to acquire that intelligent knowledge of hygiene and sanitation which was so absolutely essential to the physical and moral welfare of both individuals and communities. Mrs. H. P. Boulnois discussed the Ethics of Sanitation and pointed out that lack of cleanliness and sanitation was a prolific source of criminality and greatly hindered the mental, moral, and physical advancement of the race. That being so, she thought that sanitation should form the object of the crusade of the nineteenth century. Gymnastics at School and Rational Dress in its bearing on Physical Exercise were the subjects dealt with by Dr. A. T. Schofield, and various other papers were read in this Section, which was well attended.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—The following candidates passed in the under-mentioned subjects:—

Surgery.—S. H. L. Archer, London Hospital; G. Candler, St. Thomas's Hospital; J. W. Clegg, Manchester; H. C. Dixon, London Hospital; T. Morris, Liverpool; L. E. V-é-tua Saville, Royal Free Hospital; M. Umanski, Kharcoff; J. C. V. Wilkins, Guy's Hospital.

Medicine, Forensic Medicine, and Midwifery.—G. Candler, St. Thomas's Hospital; H. G. T. Major, Guy's Hospital; L. E. V-é-tua Saville, Royal Free Hospital; S. B. Stedman, St. Thomas's Hospital.

Medicine and Midwifery.—T. J. McDonald, Toronto.

Medicine.—P. G. Lodge, St. Thomas's Hospital; G. A. Skinner, Guy's Hospital.

Forensic Medicine and Midwifery.—S. H. L. Archer, London Hospital.

Forensic Medicine.—W. J. Kerr, London Hospital; A. P. Woolright, St. Bartholomew's Hospital.

Midwifery.—H. Exell, Sheffield.

To Messrs. Candler, Dixon, Major, McDonald, Woolright, and Miss Saville were granted the diploma of the Society.

UNIVERSITY OF DURHAM.—FACULTY OF MEDICINE.—The following candidates have satisfied the Examiners for degrees in Medicine and Surgery at the College of Medicine, Newcastle-on-Tyne, at the second examination for the degree of Bachelor in Medicine:—

First-class Honours.—Edward Turner, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital.

Second-class Honours.—Charles Salkeld, B.A., College of Medicine, Newcastle-upon-Tyne; Arthur Riley, Westminster Hospital.

Pass List.—Arthur William Aldridge, Mason College, Birmingham; Mervyn Archdall, College of Medicine, Newcastle-upon-Tyne; Grant Arnott, College of Medicine, Newcastle-upon-Tyne; Henry Edward Montgomery Baylis, St. Bartholomew's Hospital; Charles Harold Clarke, Mason College, Birmingham; Henry Atherton Crossfield, St. Thomas's Hospital; John David Dodds, College of Medicine, Newcastle-upon-Tyne; Joseph Livingstone Frazer-Hurst, College of Medicine, Newcastle-upon-Tyne; John Reginald Fuller, M.R.C.S., L.R.C.P., L.S.A., St. Mary's Hospital; Ernest William Gilroy, College of Medicine, Newcastle-upon-Tyne; Herbert James Godwin, St. Bartholomew's Hospital; Harry Harte Gourley, Edinburgh University; Walter Hodges, St. Thomas's Hospital; Philip William James, St. Bartholomew's Hospital; John Lowry, College of Medicine, Newcastle-upon-Tyne; Malcolm Gordon McBean, College of Medicine, Newcastle-upon-Tyne; Norman McCall-Smith, College of Medicine, Newcastle-upon-Tyne; Marcus Sinclair Paterson, M.R.C.S., L.R.C.P., St. Mary's Hospital; Thomas Ovets Scott, M.A., College of Medicine, Newcastle-upon-Tyne; Henry Francis Shea, St. Thomas's Hospital; Gordon Stonehouse, College of Medicine, Newcastle-upon-Tyne; Eustace Wyatt Sumpter, College of Medicine, Newcastle-upon-Tyne; William Arndt Hagestadt Waite, Yorkshire College, Leeds; William Longstaff Wight Walker, College of Medicine, Newcastle-upon-Tyne; William Henry Warwick, College of Medicine, Newcastle-upon-Tyne; John Hutchinson Wood, College of Medicine, Newcastle-upon-Tyne.

FOOTBALL CASUALTIES.—On Saturday last the following accidents occurred:—During a match between the Blackburn Rovers and Burnley teams a Burnley player fractured his leg, and another player "injured his ankle." At Tottenham Marshes a player fractured his right leg, and another player, in a match close by, dislocated his patella. In a match at Idle, between the Windhill and Idle teams, a player fractured his spine and died on the following day.

THE WORTHING EPIDEMIC AND THE POOR-LAW.—The abstract of the accounts of the East Preston Union—which includes the area affected by the epidemic of enteric fever at Worthing last year—bearing on the half-year which covered the greater part of the trouble (April–September) has only just been issued. The fever hospitals at Worthing cost the authorities of the union £935 19*s.* 8*d.*; in the neighbouring village of West Tarring the sum of £200 1*s.* 4*d.* was spent in the same direction; £5 12*s.* 7*d.* was the cost of destroying infected bedding and clothing; subscriptions to hospitals were £52 11*s.*; and extra medical fees totalled £26 4*s.* No less than 1374 out-door and 127 in-door paupers were relieved in the parish of Broadwater (which includes the greater part of the borough of Worthing). Out of a list of 444 persons who received relief in the parish of Broadwater just half (222) have "illness" assigned as the "cause of receiving relief"; seventeen payments are on account of burials. In West Tarring relief was paid in nine cases of illness and in one for funeral expenses.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ALLAN, THOS. S., L.R.C.P. & S.Ed., L.F.P.S.G., has been appointed Surgeon to the Coventry Provident Dispensary, vice M. W. Oldham, resigned.

ATKINSON, G. C. B., M.R.C.S., has been appointed Medical Officer for the Clawson Sanitary District of the Melton Mowbray Union.

BENJAFIELD, HARRY, M.B., C.M.Edin., has been appointed Health Officer for the Town of Mount Stuart, Tasmania.

BLAXLAND, E. G., L.R.C.P.Lond., M.R.C.S., has been appointed Visiting Medical Officer to the Western Suburbs Cottage Hospital, New South Wales.

BOYD, J. D., M.D., Ch.M.Glasg., L.F.P.S.Glasg., L.R.C.P.Edin., has been appointed Honorary Medical Officer to the Bendigo Hospital, Victoria, South Australia.

BRUNSKILL, R. R., B.A., M.D., B.Ch.(Dub.), has been appointed Head Surgeon to the North Dispensary, Liverpool.

BUCKBY, A. G. H., L.F.P.S.Glasg., has been appointed Surgeon to the Hawera Cottage Hospital, Taranaki, New Zealand.

CARR, H., L.K.Q.C.P., L.R.C.S.Irel., has been appointed Surgeon-Lieutenant in the Medical Department, South Australian Military Forces, South Australia.

COOKSON, JOSEPH, M.B.Melb., has been appointed Health Officer for Bet Bet Shire, Victoria, Australia.

COOKSON, R. G., L.R.C.P.Lond., has been appointed Medical Officer to the Brisbane Medical Institute, Queensland.

DAVIES, THOMAS S., L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., has been appointed Government Medical Officer and Vaccinator for the district of Tocumwall, New South Wales.

EDMONDSON, C. R., M.B., C.M.Edin., has been appointed Second House Surgeon to the Royal Southern Hospital, Liverpool.

ERSON, E. G. L., L.R.C.P., L.M.Edin., has been appointed Public Vaccinator for Serviceton, Victoria, Australia.

FISHER, W., L.R.C.P.Lond., M.R.C.S., has been appointed Medical Officer to the Brisbane Medical Institute, Queensland.

FOOKS, W. P., M.B., B.C.Camb., L.R.C.P.Lond., M.R.C.S., has been appointed Assistant Medical Officer for the Workhouse, and Assistant to the Medical Superintendent of the Infirmary, Parish of Paddington.

GALBRAITH, T. H., M.B., C.M.Aberd., has been appointed Medical Officer to the Wolverhampton Union Workhouse.

GRIEVES, T. A., L.R.C.P.Lond., M.R.C.S., has been appointed Government Medical Officer and Vaccinator for the district of Wyalong, New South Wales.

HARROLD, R. E., M.B., Ch.M.Edin., has been appointed Honorary Assistant Physician to the Adelaide Hospital, South Australia.

HASSELL, GRAY, M.D., Ch.M.Aberd., has been appointed Medical Superintendent of the Sunnyside Asylum, near Christchurch, New Zealand.

HINDER, H. V. C., M.B., Ch.M.Syd., has been appointed Visiting Medical Officer to the Western Suburbs Cottage Hospital, New South Wales.

HODSON, FRED., M.R.C.S., has been reappointed Medical Officer of Health for the Hornsea Sanitary District of the Skirlaugh Union.

HOGARTH, R. G., L.R.C.P.Lond., M.R.C.S., has been appointed Junior Resident Medical Officer to the Nottingham General Hospital.

ICK, THOMAS E., M.B.Melb., has been appointed Health Officer for the district of Scottsdale, Tasmania.

JENKINS, J. H., L.R.C.P.Edin., M.R.C.S.Eng., has been appointed Medical Officer of Health for the Lytham Urban Sanitary District, vice Mackintosh.

JONES, R. T., M.D.Syd., L.R.C.P.Edin., L.F.P.S.Glasg., has been appointed Honorary Consulting Medical Officer to the Western Suburbs Cottage Hospital at Corydon, near Sydney, New South Wales.

KING, T. R., M.D.Edin., has been appointed Medical Superintendent to the Wellington and Porirua Lunatic Asylums, New Zealand.

LANE, C. T., M.B.Ch.B.Melb., has been appointed Medical Officer to the Brisbane Medical Institute, Queensland.

LARWILL, JOHN, L.R.C.P.Edin., L.R.C.S.Edin., L.F.P.S.Glas., has been appointed Junior House Surgeon to the Macclesfield General Infirmary.

MCCREERY, J. V., L.R.C.S.Irel., has been appointed Inspector of Lunatic Asylums in Victoria, South Australia, vice Dick.

MACDONALD, A., M.D.Penn., U.S.A., has been appointed Health Officer for Sale, Victoria, Australia.

MACGILLIVARY, P. H., M.R.C.S.Eng., has been appointed Honorary Medical Officer to the Bendigo Hospital, Victoria, South Australia.

MARSH, J., M.B., C.M.Edin., has been appointed Junior House Surgeon to the Royal Southern Hospital, Liverpool.

MUIR, JAMES M. M., M.B., Ch.M.Glasg., has been appointed Public Vaccinator at Leigh Road, Victoria, Australia.

NAYLOR, ARTHUR G. E., L.R.C.P., L.M., L.R.C.S.Edin., has been appointed Health Officer for Romsey Shire, Victoria, Australia.

OCHILTREE, E. G., M.D., Ch.M.Glasg., M.R.C.S., has been appointed Honorary Surgeon to the Ballarat Hospital, Victoria, Australia.

PATTON, A. S., M.D., Ch.B.Dubl., has been appointed Surgeon to the Normanton Hospital, Queensland.

PURCHAS, A. C., M.B., Ch.M.Edin., M.R.C.S.Eng., has been appointed Honorary Medical Officer to the Auckland Hospital, New Zealand.

ROSS, J. A., M.B., C.M.Aberd., has been appointed Medical Officer of Health for the Penistone Urban Sanitary District, vice Gowing, resigned.

TAYLOR, J. FRANCIS, M.R.C.S., L.S.A., has been appointed Medical Officer for the Wanstead Slip Division of West Ham Union.

TEARE, JOHN, M.B., Ch.B.Vict., has been appointed Surgeon to Her Majesty's Prisons and Permanent Militia at Wellington, New Zealand.

THANE, EDGAR H., M.D.Lond., has been appointed Medical Officer to the Wagga Wagga Hospital, New South Wales, and also Railway Medical Officer for the Wagga Wagga District.

TIBBITS, WALTER H., M.R.C.S.Eng., has been appointed Government Medical Officer and Vaccinator for the district of Gunning, New South Wales.

TRAILL, M. W., L.R.C.P.Lond., M.R.C.S., has been appointed Visiting Medical Officer to the Western Suburbs Cottage Hospital, New South Wales.

WARING, J. A., M.B., L.R.C.P.Lond., M.R.C.S., has been appointed Senior Resident Medical Officer to the Nottingham General Hospital.

WICKHAM, H. T., M.B., C.M.Edin., has been appointed Medical Officer for the Tenth Sanitary District of the Newport Pagnel Union.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ANCOATS HOSPITAL, Manchester.—Resident Junior House Surgeon. Salary £60, with board and washing.

CANCER HOSPITAL (FREE), Brompton-road, S.W.—Two House Surgeons. Salary at the rate of £60 and £50 per annum respectively, with board and residence.

CHILDREN'S HOSPITAL AND DISPENSARY, Manchester.—Medical Officer. Salary £180 per annum.

CUMBERLAND INFIRMARY, Carlisle.—Assistant House Surgeon for one year. Salary £40 per annum, with board, lodging, and washing.

EAST LONDON HOSPITAL FOR CHILDREN, Glamis-road, Shadwell, E.—House Physician. Board, lodging, &c., provided.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, 17, Bartlett's-buildings, Holborn.—Honorary Physician.

GENERAL INFIRMARY AND DISPENSARY, Doncaster.—In-door Dispenser and Assistant to House Surgeon. Board, lodging, and washing provided.

GENERAL INFIRMARY, Leeds.—Pathological Curator. Honorarium 20 guineas a year.

HULL ROYAL INFIRMARY.—Assistant House Surgeon. Salary £60, with board and furnished apartments.

HULL ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £40, with board and lodging.

LEWISHAM UNION.—Infirmary Dispenser at the new Infirmary, 282, High-street, Lewisham, S.E. Salary £100 per annum, and dinner and tea daily. Applications to the Clerk to the Guardians, Union Offices, 286, High-street, Lewisham, S.E.

LONDON FEVER HOSPITAL, Liverpool-road, N.—Assistant Resident Medical Officer. Salary £120 per annum.

MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £80 per annum, with apartments and board.

MANCHESTER SOUTHERN AND MATERNITY HOSPITAL.—Resident House Surgeon. Honorarium at the rate of £50 per annum and board.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician, House Surgeon, and Assistant House Surgeon. The House Physician and House Surgeon will each receive a salary at the rate of £60 a year. The Assistant House Surgeon will receive a salary at the rate of £30 a year.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART AND PARALYSIS, Soho-square, W.—Resident Medical Officer for six months. Residence in the hospital and an honorarium of £10 10s. on satisfactory completion of the term of appointment.

NEWARK HOSPITAL AND DISPENSARY.—House Surgeon. Salary £80 per annum. Will be required to do the Dispensing, for which a further sum of £40 will be paid.

ROTHERHAM HOSPITAL DISPENSARY.—Assistant House Surgeon for six months. Rooms, commons, and washing provided in the hospital.

SEAMEN'S HOSPITAL SOCIETY, *Dreadnought*, Greenwich, S.E. House Physician for *Dreadnought* Hospital, Greenwich. Salary £75 per annum, with board and residence.—House Surgeon for *Dreadnought* Hospital, Greenwich. Salary £50 per annum, with board and residence.—Junior House Surgeon for Branch Hospital, Royal Albert Dock, E. Salary £50 per annum, with board and residence. Applications to the Secretary, Greenwich.

THE ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon for six months. Board, lodging, and washing provided.

THE VICTORIA INFIRMARY OF GLASGOW.—Superintendent and Resident Officer. Salary £300 a year, with board and lodging in the Infirmary, but the Governors are prepared to provide a house if a married man is appointed.

WALSALL AND DISTRICT HOSPITAL.—Resident House Surgeon. Salary £100 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

BADDELEY.—On Sept. 23rd, at Weston House, Newport, Salop, the wife of C. E. Baddeley, M.D. Lond., of a son.

BROWN.—On Sept. 15th, at Rectory-road, Stoke Newington, N., the wife of Reginald Brown, M.R.C.S., of a son.

COLBOURNE.—On Sept. 24th, at Gorstage, Sandiway, Cheshire, the wife of Louis Colbourne, M.D., Buenos Ayres, of a son.

EVANS.—On Sept. 24th, the wife of Henry Evans, L.R.C.P. Lond., M.R.C.S., of Buckingham-road, Brighton, of a daughter.

OLIVER.—On Sept. 15th, at 7, Ellison-place, Newcastle-upon-Tyne, the wife of Thomas Oliver, M.D., F.R.C.P., of a daughter.

VINEY.—On Sept. 22nd, at Harcourts, Chertsey, the wife of Dr. Viney, of a daughter (prematurely).

WAKEFIELD.—On Sept. 20th, at 114, Lancaster-road, Notting-hill, the wife of Clark Wakefield, M.D., F.R.C.S. Ed., of a son.

WEBB.—On Sept. 20th, at Canterbury-road, Margate, the wife of Cholmondeley Webb, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

WILLIAMS.—On Sept. 17th, at Penarth, the wife of W. Williams, M.A., M.B., D.P.H. (Oxon.), of a daughter.

MARRIAGES.

BRUSHFIELD—RUSSELL.—On Sept. 25th, at St. Peter's, Lee, Kent, Thomas Brushfield, M.A., M.B. Cantab., of Woodside, Wimbledon, to Susan, youngest daughter of the late John Russell, M.D., of George-street, Limerick.

CORNER—CONNELL.—On Sept. 22nd, at St. Matthew's Church, Clapton, Dr. Harry Corner, Earlswood Asylum, Surrey, to Janet Ashcombe, elder daughter of William Connell, Springfield, Clapton.

HUGHES—SIMPSON.—On Sept. 24th, at St. Paul's Church, Valletta, Malta, Matthew Louis Hughes, Surgeon-Captain A.M.S., eldest son of Colonel E. Hughes, C.B., C.M.G., Assistant-Adjutant-General, Malta, to Kate Winifred, daughter of Henry Simpson, M.D., of Altrincham, Cheshire.

MAYNARD—KING-BELL.—On Sept. 12th, at the Parish Church, Brighton, Edward Forster Maynard, M.D., to Florence King-Bell.

PENROSE—WALTERS.—On Sept. 20th, at St. Mary's, Wimbledon, by the Rev. William Jowett, M.A., Rector of Stevenage, assisted by the Rev. J. Penrose, M.A., Vicar of West Ashton, Francis George Penrose, M.D., M.R.C.P., of 4, Harley-street, London, only son of Francis Cranmer Penrose, F.R.S., of Colebyfield, Wimbledon, to Mary Helen, only daughter of Laundy Walters of Woodhays, Wimbledon.

RANKIN—TAYLOR.—On Sept. 12th, at St. Matthew's Church, Nottingham (by licence), by the Rev. T. B. B. Terris, Alec, elder son of Dr. James Rankin, L.F.P.S.G., and L.M., Kilmarnock, to Carrie, eldest daughter of John Taylor, Esq., Nottingham, and niece and godchild of Mrs. Roberts Harrison, "Hygienia," Castle Donington.

DEATHS.

MCSHANE.—At Chefoo, China, George McShane, Surgeon, R.N., H.M.S. *Linnet*, aged 31.

TAIT.—On Sept. 20th, at Randolph-gardens, Maida-vale, N.W., George A. F. Tait, L.R.C.P. Edin., late of Coquimbo, Chili, S.A., aged 64.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 27th, 1894.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Rainfall.	Remarks at 8.30 A.M.
Sept. 21	30·04	S.E.	57	55	64	60	55	...	Overcast
,, 22	29·89	E.	54	52	63	59	51	0·08	Overcast
,, 23	29·76	E.	59	57	88	64	53	0·12	Overcast
,, 24	29·77	E.	60	59	81	64	57	0·05	Overcast
,, 25	29·68	E.	59	58	64	61	57	0·17	Raining
,, 26	29·73	N.	56	55	68	58	55	0·11	Cloudy
,, 27	30·14	N.E.	51	47	94	60	46	...	Fine

Notes, Short Comments & Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICE.

THE INDEX TO THE LANCET.

IN order to facilitate the work of reference to the volumes of THE LANCET, duplicate copies of the Index to each half-yearly volume are published in a form in which they may be subsequently filed or bound together. Those of our subscribers who may wish to be supplied with loose copies can obtain the same (without extra charge) on making application to the Manager of THE LANCET.

THE LOCUM TENENS AND COURT OR CORONERS' FEES.

WE are often appealed to as to the right of a locum tenens to keep full coroners' or court fees. In this case both the locum tenens and his principal write to us in regard to their respective claim to a fee for an inquest and a post-mortem examination. The locum tenens argues that it is his as the services were entirely personal; the principal that the locum tenens was acting for him, and as such only had any *locus standi*. The solution is obvious. The fees should be divided equally.

Medicus.—There are no tariffs for such cases. Our correspondent's knowledge of local and personal circumstances makes him the only judge of what is reasonable.

Mr. H. T. Talbot will find a report on Dr. Viquerat's treatment of tuberculosis at p. 756 of this issue.

THE MEDICAL REGULATIONS IN THE NAVY.

To the Editors of THE LANCET.

SIRS,—I shall feel obliged if you will inform me if any regulations for the more advantageous retirement of medical officers in the Royal Navy are expected to be issued shortly.

I am, Sirs, your obedient servant,

September, 1894. AN OLD SALT.

*** We have tried to obtain information on this subject for our correspondent, but without success.—ED. L.

LIABILITY FOR ACCOMMODATION IN INFECTIOUS HOSPITALS.

AT St. Asaph the county court judge, Sir Horatio Lloyd, has given what seems to us to be a somewhat singular decision in a case in which a parent was sued by the Rhyl Improvement Commissioners for the sum of £3 10s., being seven weeks' maintenance of his son whilst suffering from scarlet fever at the Rhyl Infectious Diseases Isolation Hospital. The charge was at the rate of 10s. a week, or 60 per cent. below the actual cost. Sir Horatio Lloyd decided that inasmuch as the parent had not contracted to pay for his child he could not be held liable. He therefore gave a verdict for the defendant. But as the child had benefited greatly by the accommodation and nursing, and as there was some kind of moral liability, he would not allow costs. We do not quite understand this decision. To the non-legal mind it would seem that a child not being able to pay for itself the parent was liable, as any adult would have been who was able to pay. Doubtless the Commissioners will be careful in future to obtain from parents who can pay an undertaking to do so.

LEX.—Whether a woman be pregnant or not, it is a criminal offence to do anything with a view of "bringing on the menses and so causing a miscarriage." A medical man may have good and sufficient reason for terminating a pregnancy, and it would, of course, be legal for him to do it. In such a suppositional case as that submitted to us it would be unwise in the extreme to act without a consultation. If a medical man who saw the deceased two days before death refused to give a certificate it would be impolitic on the part of another medical man to do so if he only saw the child "draw its last breath"—that is, supposing he knew his fellow practitioner had refused to certify. Under any circumstances we should say it was a case to report to the coroner. Clearly the principal, if he never saw the patient, ought not to give a certificate of the cause of death. Legally a non-registered but qualified assistant cannot certify, and technically the case mentioned might be one of covering, but morally there would be much to extenuate if the assistant attended the patient and the principal saw him before his death.

Mr. William Dodds (Newcastle-on-Tyne) and *J. H. H.* (Liverpool).—We cannot recommend individual practitioners by name; our correspondents' present medical advisers are the proper people to suggest the consultant physicians.

"AN INQUIRY."

To the Editors of THE LANCET.

SIRS,—I see in THE LANCET of the 15th inst. that "Veritas" inquires as to the usual charges to labourers and small farmers for visits and medicine. In your last issue the question is answered by "Necessitas" as follows: "The usual charge is 2*s.* or 2*s.* 6*d.*, irrespectively of distance, for visit and medicine." The advice does not hold good for a scattered practice. Imagine having even three patients a day in different directions and three or four miles distant from each other or headquarters, necessitating perhaps twenty miles' driving; calculate the value of the time expended, and the horseflesh and advice and medicine; put this against the fees earned—viz., seven and sixpence (and this perhaps will be booked): what is the profit? A conveyance could not be hired for the sum. One shilling a mile is the usual charge, in addition to half-a-crown for advice and a mixture. No one under the circumstances I have suggested could act upon "Necessitas's" advice.

I am, Sirs, yours faithfully,

Sept. 24th, 1894. COUNTRY DOCTOR.

A DIFFERENCE OF OPINION AT BURNLEY.

THE *Manchester Evening Mail* reports a difference of opinion between Mr. Robinson, the Union medical officer, Burnley, and Dr. Dean, the medical officer of health. The point in dispute is as to the medical attendance of pauper patients sent to the Corporation (Fever) Hospital, Dr. Dean regarding it as the duty of the Union medical officer, Mr. Robinson as that of the medical officer of the corporation. It is a matter for friendly settlement between the corporation and the guardians. But it is certainly not one in which any serious difference between the medical officers should have arisen.

Mr. R. P. Clements.—1. It is not proper for the authorities of the National Society for the Prevention of Cruelty to Children to ask a practitioner to see children under the care of another practitioner without first asking the practitioner in attendance to be present. 2. Another practitioner should not visit such a case until the practitioner in attendance has consented to his doing so. 3. The practitioner in attendance should not refuse this consent hastily or for insufficient reason. Such a course would not be in the public interest. It would be questionable to base such a refusal on a point of etiquette. The National Society for the Prevention of Cruelty to Children should on no account disregard the practitioner in attendance, and certainly should have no countenance in doing so from any medical practitioner.

M.A., M.D. has omitted to enclose his card.

UNQUALIFIED PRACTITIONERS AT NEWINGTON.

MR. WYATT, Deputy-Coroner, recently held an inquest on a child that had been attended twice at a dispensary in Newington, and supplied with medicine for fourpence each time. After the second visit the child expired. The mother, on going to the dispensary after the death of the child, found that the "doctor" had left. He appeared to have gone, "furniture and all." The jury and coroner were of opinion that he was one of a number of unqualified practitioners about that district. As the coroner said, "this is nothing less than a fraud on the public." But whose business is it to bring such defrauders to their deserts? Surely that of the police.

Mr. W. H. Hale.—The subject was investigated, so far as regards Egyptian cigarettes, by THE LANCET Analytical Sanitary Commission on Egyptian Cigarettes (*vide* THE LANCET of Oct. 20th, 1888), but not a particle of evidence was obtained of the injuriousness of the paper employed. Starch was used as a seal; and the only possible, but chimerical, objection that might be urged would be the use of copper in the printing of the brand of cigarettes on the paper.

Courabyra.—The claim of the Royal College of Physicians of London that its single diploma of Licentiate should admit to the Medical Register has been established in a friendly law-suit. It would seem, therefore, that "L.R.C.P. Lond., L.S.A." is qualified to compete for the post alluded to.

E. W. P. (Cowes).—Considering L.'s doubtful liability in the matter, we should not advise our correspondent to press for the balance. The charges for visits are reasonable.

Mr. Bernard Roth is referred to an annotation in our issue of Sept. 15th.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (1 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.).

TUESDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1.30 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY.—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), Gt. Northern Central (2.30 P.M.), King's College (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.).

THURSDAY.—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (2 P.M.), Chelsea (2 P.M.), Soho-square (2 P.M.), North West London (2 P.M.).

FRIDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), Cancer (2 P.M.).

SATURDAY.—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY.—OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown by Drs. Remfry, Duncan, Cullingworth, Lewers, and others. Papers:—Dr. Cullingworth: Three cases of Pelvic Inflammation attended with Abscess of the Ovary, with Clinical Remarks.—Dr. Braithwaite (Leeds): On Atrophy with Collapse (Cirrhosis), Fibroid Degeneration, and Angronia of the Ovaries.

FRIDAY.—WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—8 P.M. Ordinary Meeting. Dr. Banning's Presidential Address. Dr. Sutherland: The Difficulties of Prognosis in Insanity.—Dr. G. H. Robinson: Cat's Pelvis with Kitten impacted (Specimen).

During the week marked copies of the following newspapers have been received:—*Glasgow Herald, Veterinary Record, Manchester Courier, Oban Times, Birmingham Gazette, Courrier de la Presse, Dorset County Chronicle, Durham Chronicle, Scotsman, Times of India, Huddersfield Daily Chronicle, Western-super-Mare Gazette, Architect, Le Temps (Paris), Norfolk News, Pioneer Mail, Builder, Reading Mercury, City Press, Leeds Mercury, Weekly Free Press and Aberdeen Herald, Local Government Chronicle, Hertfordshire Mercury, West Middlesex Standard, Sanitary Record, Yorkshire Post, Liverpool Daily Post, Bristol Mercury, Cork Daily Herald, West Middlesex Advertiser, Guy's Hospital Gazette, Surrey Advertiser, Evening Express (Liverpool), The Star, Local Government Journal, Australasian Medical Gazette, Burton Chronicle, North Devon Herald, Fishing Gazette, Health, Nursing Record, Chester Courant, Rochdale Observer, St. Bartholomew's Hospital Journal, Cassell's Saturday Journal, Science Siftings, Rhyl Journal, Derbyshire Courier, Belgian News, Bolton Evening News, Morning Advertiser, North-Western Gazette, People's Advocate, Lincolnshire Echo, Liverpool Mercury, &c., &c.*

Communications, Letters &c. have been received from—

A.—Surgeon-Major E. J. Addison, Poona, India; Mr. W. Ashe-Payne, London; Mr. H. E. Armstrong, Newcastle-on-Tyne; Ancoats Hospital, Manchester, Hon. Secretary of; Æsculap Bitter Water Co., Ltd., London, Manager of; An Old Subscriber; A. N., London.

B.—Dr. P. Boobbyer, Liverpool; Mr. R. Barwell, London; Mr. J. Bowes, Herne Bay; Mr. H. Burgess, Manchester; Mr. J. Boydell, Matlock Bath; Mr. M. R. Brandreth, London; Mr. F. M. Beresford, Machynlleth; Messrs. Burgoyne, Burbidges, and Co., London; Messrs. Blizzard and Co., Birmingham; Messrs. A. and C. Black, London; Messrs. Blondeau et Cie., London; Mr. G. A. Belson, Bampton; British and Foreign Paper Stock Co., Ltd., London, Director of.

C.—Dr. J. Callender, Leeds; Dr. T. P. Cowen, Manchester; Mr. T. Culleton, London; Mr. J. E. Cornish, Manchester; Mr. R. N. Clements, Leicester; Mr. E. Calthrop, London; Messrs. Callard and Co., London; Messrs. Corbyn, Stacey, and Co., London; Messrs. Coleman and Co., Ltd., Norwich; Cortland Wagon Co., London; Clerical and Medical Bank, Bath, Manager of; *Columbus Medical Journal*, Editor of.

D.—Mr. H. C. C. De Renzi, London; Dr. T. Duka, London; Messrs. W. Dawson and Sons, Limited, London; Mr. P. Dunlop, London; Doncaster General Infirmary, Secretary of.

E.—Mr. T. W. N. Elvin, Dereham; Messrs. Eason and Son, Dublin; Edinburgh School of Medicine, Secretary of.

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